



中信国际招标有限公司

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## 澄清（一）和补遗（十二）

### Clarification (I) & Amendment (XII)

#### 澄清（一）

#### Clarification (I)

**项目名称：**滇西科技师范学院利用以色列政府贷款购置应用型教育实验实训设备建设项目（第一包：教务处、智能与信息工程学院、管理与经济学院设备采购）（重新招标）

**Project Name:** West Yunnan University Construction Project of Application-Oriented Educational Experimental Training Equipment Procurement Utilizing Israeli Government Loan (Package 01: Procurement of Equipment for the Academic Affairs Office, Faculty of Intelligent and Information Engineering, Faculty of Management and Economics) (Re-Bidding)

**招标编号 Bid No.:** 0733-225122263676/01（重新招标）/ (Re-Bidding)

各潜在投标人：

All potential bidders,

关于上述项目招标文件，根据投标人的澄清，现做出答复如下：

With reference to the bidding document of the captioned project, according to the clarification of the bidder, the reply is as follows:



**Question 1/问题 1:**

招标文件投标资料表 24.5 条规定：“单项设备下，投标文件不满足招标文件技术规范一般性条款的内容累计超过 5 项（含 5 项）；投标文件不满足招标文件所有设备技术规范一般性条款的内容累计超过 30 项（含 30 项）。”本项目中 01 包共 222 项产品，02 包共 475 项产品，每一包的技术规格条款总数均超过 1 万条，而单个分包允许不满足的一般性条款数仅 30 项，明显偏少不太合理，也不符合本项目的购置产品的实际情况。

建议删除对偏离条款总项数的要求修改为：“单项设备下，投标文件不满足招标文件技术规范一般性条款的内容累计超过 5 项（含 5 项）。”

Clause 24.5 of the ITB Data Sheet stipulates that " Under the single equipment item, the number of deviation items of the bid from the main specifications in the Technical Specifications of the Bidding Documents amount to or exceed 5 items (5 items inclusive). The Number of deviation items of the bid from the main specifications in the Technical Specifications of all the equipment of the Bidding Documents amount to or exceed 30 items (30 items inclusive)." But in this project, in contrast with only 30 deviations allowed, the total number of technical specification clauses of 10,000 in each package for the 222 products in 01 package and 475 products in 02 package, it is obviously too few and unreasonable, and does not conform to the actual situation of the purchased products of the project.

Suggestion: delete the requirement for the total number of deviation clauses and amend it to: "Under the single equipment, the accumulative number of deviation items of the bid from the main specifications in the technical specifications of the Bidding Documents exceed 5 items."

**回复：**招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

**Question 2/问题 2:** 招标文件第六章投标资料表中“\*12.1 & 12.2 所有价格应当使



用美元报价”，基于目前国际形势，美元的贷款利率经过 2022 年美联储 7 次加息已经达到历史高点，使用美元作为贷款结算货币可能大幅提高本项目的融资成本。欧元作为国际贷款的主流货币之一，目前的利息水平还处于历年以来的正常浮动范围之内，建议增加欧元作为本项目的报价货币，这样可以帮助招标人多一个优化项目融资的成本的选择，以最大可能的降低融资成本。

**建议修改为：“\*12.1 & 12.2 所有价格应当使用美元或者欧元报价”**

Clause \*12.1 & 12.2 of the ITB Data Sheet stipulates that all quoted price shall be in USD. Based on the current international situation, the loan interest rate of US dollar has reached a historical high after seven interest rate increases by the Federal Reserve in 2022. Using US dollar as the loan settlement currency may significantly increase the financing cost of the project. EURO, as one of the mainstream currencies of international loans, the current interest rates are still within the normal floating range over the years, therefore, it is suggested to increase the EURO as the quoted currency of the project, which can help the tenderer to choose more options to optimize the cost of project financing and reduce the financing cost as much as possible.

**It's suggested to amend to: \*12.1 & 12.2: All quoted price shall be in USD or EURO.**

**回复：**招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

### **Question 3/问题 3**

问题：在设备序号 01 至 32 项招标技术要求中，存在较多提供软件著作权证书要求。一般而言，在中国境内销售软件产品必须有中国认定的软件著作权证书，我认为就同类软件产品厂商而言，每家使用的标准不一样，在功能描述上采用的语言也不一致，并且本项目技术评议标准对设备技术规范一般性条款不满足项数有所要求，为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的



原则，建议删除提供软件著作权证书的证明要求，以保证至少有华文众合、文兴科技、翰墨派三个以上的主流国内厂商能够满足该参数要求。

建议：删除其中相关对软件著作权证书的要求

Question: There are many requirements for providing software copyright certificates in the bidding technical requirements of equipment S.N. 01 to 32. Generally speaking, software products sold in China must have the software copyright certificate recognized by China. Our company believes that for similar software product, the standards used by each manufacturer are different, and the languages used in the function description are also different. Meanwhile, the technical evaluation criteria of this project has stipulations about the number of items that are not met in the general terms of the equipment technical specification, in order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that the establishment of bidding documents should not exclusively specify a certain product, it is suggested to delete the requirements for providing the software copyright certificate, so as to ensure that at least three mainstream domestic manufacturers, including Huawei Zhonghe, Wenxing Technology and Hanmopai, can meet the parameter requirements.

Suggestion: Delete relevant requirements for software copyright certificate.

回复：招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

#### **Question 4/问题 4**

在设备序号 33 至 79 项招标技术要求中，存在较多提供软件著作权证书要求。一般而言，在中国境内销售软件产品必须有中国认定的软件著作权证书，我公司认为软件著作权登记证书通常用于生产厂商定期公告宣传自己的产品，并保护自身



产品免受著作权方面的纷扰，在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，建议删除提供软件著作权证书的证明要求，以保证至少有金蝶、用友新道、浪潮三个以上的主流国内厂商能够满足该参数要求。

建议：删除其中相关对软件著作权证书的要求

Question: There are many requirements for providing software copyright certificates in the bidding technical requirements of equipment S.N.33 to 79. Generally speaking, software products sold in China must have a software copyright certificate recognized by China. Our company believes that the software copyright registration certificate is usually used by manufacturers to regularly publicize their products and protect their products from copyright disputes. Required certificates in the bidding may restrict or exclude prospective bidders from reasonably selecting the best cost-effective product manufacturer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that the the establishment of bidding documents should not exclusively specify a certain product, it is suggested to delete the requirements for providing the software copyright certificate, so as to ensure that at least three mainstream domestic manufacturers, like Kingdee, Yonyou Seentao, Inspur, can meet the parameter requirements.

回复：招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

#### **Question 5/问题 5**

问题：在设备序号 80 至 92 项招标技术要求中，存在较多提供软件著作权证书要求。一般而言，在中国境内销售软件产品必须有中国认定的软件著作权证书，我



公司认为软件著作权登记证书通常用于生产厂商定期广告宣传自己的产品，并保护自身产品免受著作权方面的纷扰，在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，建议删除提供软件著作权证书的证明要求，以保证至少有步惊云、思沃、嵩之岳三个以上的主流国内厂商能够满足该参数要求。

建议：删除其中相关对软件著作权证书的要求

Question: There are many requirements for providing software copyright certificates in the bidding technical requirements of equipment S.N.80 to 92. Generally speaking, software products sold in China must have a software copyright certificate recognized by China. Our company believes that the software copyright registration certificate is usually used by manufacturers to regularly publicize their products and protect their products from copyright disputes. Requiring certificates in the bidding may restrict or exclude prospective bidders from reasonably selecting the best cost-effective product and manufacturer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it is suggested to delete the requirements for providing the software copyright certificate, so as to ensure that at least three mainstream domestic manufacturers, like Bujingyun, Siwo, Songzhiyue, can meet the parameter requirements.

Suggestion: Delete the relevant requirements for software copyright certificate

回复：招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.



**Question 6/问题 6:**

在设备序号 80 至 92 项招标技术要求中，存在较多提供软件著作权证书要求。一般而言，在中国境内销售软件产品必须有中国认定的软件著作权证书，我公司认为软件著作权登记证书通常用于生产厂商定期公告宣传自己的产品，并保护自身产品免受著作权方面的纷扰，在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，建议删除提供软件著作权证书的证明要求，以保证至少有步惊云、思沃、嵩之岳三个以上的主流国内厂商能够满足该参数要求。

建议：删除其中相关对软件著作权证书的要求

Question: There are many requirements for providing software copyright certificates in the bidding technical requirements of equipment S.N.80 to 92. Generally speaking, software products sold in China must have a software copyright certificate recognized by China. Our company believes that the software copyright registration certificate is usually used by manufacturers to regularly publicize their products and protect their products from copyright disputes. Requiring certificates in the bidding may restrict or exclude prospective bidders from reasonably selecting the best cost-effective product and manufacturer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it is suggested to delete the requirements for providing the software copyright certificate, so as to ensure that at least three mainstream domestic manufacturers, like Bujingyun, Siwo, Songzhiyue, can meet the parameter requirements.

回复：招标文件有修改，详见补遗（十二）。

Reply: There are changes to the bidding documents, please refer to **Amendment (XII)**



for the details.

**Question 7/问题 7:**

招标设备序号：113，名称：人工智能与大数据教学、科研服务器集群

(1) 招标技术要求：

招标技术要求：9.服务器管理软件：提供但不限于与硬件相适应的服务器管理软件，满足但不限于管理服务器、网络、存储等功能，提供相应管理软件的手机版（包括安卓和 IOS 版本）

问题：列举的上述招标技术要求第 9 项，不同生产厂商在软件功能描述上存在差异，作为服务器管理软件主要是用于提供与硬件相适应服务器管理功能。过多详细的功能描述会让招标参数存在倾向性。为了保证招标要求至少应符合三个以上市场主流品牌的参数，例如：H3C、中科曙光、浪潮、华为等。

建议：删除该项技术参数。或修改为：服务器管理软件：提供但不限于与硬件相适应的服务器管理软件。

(2) 招标技术要求：“10. 可靠性和质保：满足但不限于平均无故障运行时间 MTBF 不低于 15 万小时，提供 相关认证证书复印件，提供 3C 认证证书、环境标志产品认证证书；”；“11. 抗干扰：正常工作承受的浪涌（冲击）抗扰度 $\geq 4kV$ （线线/线地）；正常工作所承受的连续波辐射骚扰抗扰度 $\geq 10V/m$ ；正常工作所承受的工频磁场抗扰度 $\geq 10A/m$ ； 并提供国家级认证机构 NCTC 相关证明材料；”

问题：列举的上述招标技术要求第 10 项、11 项两项招标要求仅联想一个品牌可以完全满足要求，服务器集群作为民用消费级产品，招标要求至少应符合三个以上市场主流品牌的参数，例如：H3C、中科曙光、浪潮、华为等。

建议：删除第 10 项、11 项招标要求。

S.N.:113, Name: AI and big data teaching, scientific research server cluster

(1) Technical Requirements for : 9. Server management software: include the server management software compatible with hardware and the functions of the management server, network and memory but without limitation, the mobile phone version (including Android and IOS versions) of the corresponding management software.

Question: For requirements listed in item 9, as there are differences in the description



of software functions between different manufacturers. As a server management software, it is mainly used to provide server management functions that are compatible with hardware, however, the listed requirement is too detailed descriptions in function that has made the bidding parameters in favour of a certain product. In order to ensure that at least three mainstream brands in the market, such as H3C, Zhongke Shuguang, Inspur, Huawei, etc can meet bidding parameters.

Suggestion: Delete this technical parameter, or modified as: server management software: provide but not limited to server management software that is compatible with hardware.

(2) Technical Requirements for :“10. Reliability and quality assurance: meet the requirements for the MTBF of no less than 150,000, hours, and provide copies of relevant certificates, including 3C certificates and environmental label certificates;”  
“11. Anti-interference: surge (impact) immunity in normal operation:  $\geq 4\text{kV}$  (line-to-line and line-to-ground); continuous wave radiation immunity in normal operation:  $\geq 10\text{V/m}$ ; PF magnetic field immunity in normal operation:  $\geq 10\text{A/m}$ ; provide related certificates issued by the national certification organization NCTC.”

Question: For requirements listed in item 10, only one brand, Lenovo can fully meet the bidding requirements listed in the item 10 and 11. As a civilian consumer product, the bidding requirements should meet the parameters of at least three mainstream brands in the market, such as H3C, Sugon, Inspur, Huawei, etc.

Suggestion: Delete item 10 and 11.

回复：招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

**Question 8/问题 8.**

招标设备序号：115，名称：人工智能计算处理节点群



(1) 招标技术要求：11.服务器管理：提供但不限于与硬件相适应的服务器管理软件，满足但不限于管理服务器、网络、存储等功能，提供相应管理软件的手机版本（包括安卓和 IOS 版本）。

问题：列举的上述招标技术要求第 11 项，不同生产厂商在软件功能描述上存在差异，作为服务器管理软件主要是用于提供与硬件相适应服务器管理功能。过多详细的功能描述会让招标参数存在倾向性。为了保证招标要求至少应符合三个以上市场主流品牌的参数，例如：H3C、中科曙光、浪潮、华为等。

建议：删除该项技术参数。或修改为：服务器管理软件：提供但不限于与硬件相适应的服务器管理软件。

(2) 招标技术要求：“12.可靠性和质保：满足但不限于平均无故障运行时间 MTBF 不低于 15 万小时，提供相关认证证书复印件，提供 3C 认证证书、环境标志产品认证证书；”；“13.抗干扰：正常工作承受的浪涌（冲击）抗扰度 $\geq 4kV$ （线线/线地）；正常工作所承受的连续波辐射骚扰抗扰度 $\geq 10V/m$ ；正常工作所承受的工频磁场抗扰度 $\geq 10A/m$ ；并提供国家级认证机构 NCTC 相关证明材料；”

问题：列举的上述招标技术要求第 12 项、13 项两项招标要求仅联想一个品牌可以完全满足要求，服务器集群作为民用消费级产品，招标要求至少应符合三个以上市场主流品牌的参数，例如：H3C、中科曙光、浪潮、华为等。

建议：删除上述第 12 项、13 项招标要求。

S.N.:115, Name: AI computing cluster nodes

(1) Technical Requirements for : 11. Server management: Include the server management software compatible with hardware and the functions of the management server, network and memory but without limitation, the mobile phone version (including Android and IOS versions) of the corresponding management software.

Question: For requirements listed in item 11, as there are differences in the description of software functions between different manufacturers. As a server management software, it is mainly used to provide server management functions that are compatible with hardware, however, the listed requirement is too detailed descriptions in function that has made the bidding parameters inclined to a certain product, In order to ensure



that at least three mainstream brands in the market, such as H3C, Zhongke Shuguang, Inspur, Huawei, etc can meet bidding parameters.

Suggestion: Delete this technical parameter or amend to: server management software: Provide but not limited to server management software that is compatible with hardware.

(2) Technical Requirements for : “ 12. Reliability and quality assurance: Meet the requirements for the MTBF of no less than 150,000 hours, and provide copies of relevant certificates, including 3C certificates and environmental label certificates; ” ; “ 13. Anti-interference: Surge (impact) immunity in normal operation:  $\geq 4\text{kV}$  (line-to-line and line-to-ground); continuous wave radiation immunity in normal operation:  $\geq 10\text{V/m}$ ; PF magnetic field immunity in normal operation:  $\geq 10\text{A/m}$ ; provide related certificates issued by the national certification organization NCTC.

Question: For requirements listed in item 12 and 13, only one brand - Lenovo can fully meet this requirements. As a civilian consumer product, the bidding requirements should meet the parameters of at least three mainstream brands in the market, such as H3C, Sugon, Inspur, Huawei, etc.

Suggestion: Delete above item 12 and 13.

**回复:** 招标文件有修改, 详见补遗(十二)。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

**Question 9/问题 9.**

在设备序号 114 至 120 项招标技术要求中, 要求提供功能截图并加盖公章。我认为就同类产品厂商而言, 产品的技术特点以及宣传侧重点并不一样, 在功能界面设计结构无法完全达到完全一致, 要求提供功能截图, 存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文



件编制要求产品非唯一指向的原则，建议删除提供截图的证明要求，以保证至少有浪潮、华清远见、航虹科教等三个以上的主流国内厂商能够满足该参数要求。

建议：删除相关要求提供截图的参数。

Question: For the equipment S.N. 114 to 120, it is required to provide functional screenshots affixed with official seals. Our company thinks that for manufacturers of similar products, the technical characteristics and publicity focus of the products are different, and the design structure of the functional interface cannot be completely consistent, so required to provide functional screenshots may restrict or exclude prospective bidders from reasonably selecting the best cost-effective product. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it is suggested to delete the requirement of providing screenshots so that at least three mainstream domestic manufacturers, such as Inspur, Huaqing Yuanjian and Hanghong Kejiao, etc. can meet the parameter requirements.

Suggestion: Delete parameters that require to provide screenshots.

**回复：**招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

### **Question 10 /问题 10**

招标设备序号：120，名称：人工智能应用课程资源包

招标技术要求：\*3.1 环境：创建 $\geq 4$ 个虚拟机组成集群，其中1个虚拟机作为NameNode， $\geq 2$ 个虚拟机作为DataNode，1个虚拟机作为数据可视化节点。单台



虚拟机配置不低于单核，内存 $\geq 4\text{G}$ ，硬盘 $\geq 50\text{GB}$ ，其中 NameNode 需要 250GB 硬盘；

问题：该条技术要求中对应用环境最低级数做出了具体下限量的要求，且本条属标记为“\*”的废标条款，存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。此条参数为人工智能课程资源的一个基本运行环境要求，非核心技术要求不必要加“\*”条款进行限制。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则。

建议：去除本条“\*”要求并修改为：3.1 环境：创建 $\geq 3$ 个虚拟机组成集群，其中 1 个虚拟机作为 NameNode， $\geq 1$  个虚拟机作为 DataNode，1 个虚拟机作为数据可视化节点。单台虚拟机配置不低于单核，内存 $\geq 4\text{G}$ ，硬盘 $\geq 50\text{GB}$ ，其中 NameNode 需要 250GB 硬盘；

S.N.: 120, Name: AI application course resource package

Technical Requirements for : \* 3.1 Environment: Create at least four VMs as a cluster, including one VM as the NameNode, at least two VMs as datanodes, and one VM as the data visualization node. The minimum configuration of each VM includes one core, memory ( $\geq 4\text{G}$ ) and disk ( $\geq 50\text{GB}$ ). A 250GB disk is required for NameNode.

Question: This technical requirement has a specific lower limit requirement for the lowest level of application environment, and is a bid rejection clause marked with "\*", which may restrict or exclude prospective bidders from reasonably selecting the best cost-effective products. As this parameter is a basic operating environment requirement for AI course resources, it is not necessary to add "\*" clause to limit non-core technical requirements. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents.

Suggestion: Remove the clause of "\*" and amend to: 3.1 Environment: create  $\geq 3$  VMs as a cluster, including one VM as the NameNode,  $\geq 1$  VMs as datanodes, and 1



VM as the data visualization node. The minimum configuration of each VM includes one core, memory  $\geq 4G$  and disk  $\geq 50GB$ . A 250GB disk is required for NameNode.

**回复:** 招标文件未作修改,按招标文件执行。

**Reply:** The bidding documents have not been modified. Please proceed with the execution according to the bidding documents.

### **Question 11/问题 11**

招标设备序号: 121, 名称: 人工智能双足机器人开发平台

招标技术要求: \*1.仿人型机器人, 满足 $\geq 25$  个电机与制动器;

问题: 该条技术要求中对电机与制动器数量做出了具体下限量的要求, 且本条属标记为“\*”的废标条款, 存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则, 建议删除相关招标要求, 以保证至少有 softbank (软银)、幻尔、航虹科教等三个以上的主流国内厂商能够满足该参数要求。

建议: 去除本条“\*”要求并修改为: 1.仿人型机器人, 配备多个电机与制动器;

S.N.:121, Name: AI biped robot development platform

Technical Requirements for :\*1. Humanoid robot, with at least 25 motors and actuators;

Question: This technical requirement has a specific lower limit requirement for the number of motors and brakes, and is a bid rejection clause marked with "\*", which may restrict or exclude prospective bidders from reasonably selecting the best cost-effective products. As this parameter is a basic operating environment requirement for AI course resources, it is not necessary to add "\*" clause to limit non-core technical requirements. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be



exclusively specified in the establishment of bidding documents, it's suggested to delete relevant bidding requirement so as to ensure at least 3 mainstream domestic manufacturers like Softbank, Huaner, Hanghong Kejiao, etc. can meet this parameter requirement.

Suggestion: Remove the clause of "\*" and amend to: 1. Humanoid robot, with multiple motors and actuators;

**回复:** 招标文件未作修改,按招标文件执行。

**Reply:** The bidding documents have not been modified. Please proceed with the execution according to the bidding documents.

#### **Question 12/问题 12**

招标设备序号: 122, 名称: 人工智能四足机器人开发平台

招标技术要求: \*2.关节模组外径 $\leq 65\text{cm}$ ; 整机自由度 $\geq 12$ 个; 单腿自由度 $\geq 3$ 个;

问题: 该条技术要求中对关节模组外径、整机自由度、单腿自由度做出了具体下限量的要求,且本条属标记为"\*"的废标条款,存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则,建议修改相关招标要求,以保证至少有 softbank (软银)、幻尔、航虹科教等三个以上的主流国内厂商能够满足该参数要求。

建议: 去除本条 "\*" 要求并修改为: 2.关节模组外径 $\leq 80\text{cm}$ ; 整机自由度 $\geq 8$ 个; 单腿自由度 $\geq 2$ 个

S.N.:122, Name: AI quadruped robot development platform

Technical Requirements for :\*2. Outer diameter of joint module:  $\leq 65\text{cm}$ ; overall degree of freedom:  $\geq 12$ ; degree of freedom of single leg:  $\geq 3$ ;

Question: This technical requirement has a specific lower limit requirement for the outer diameter of joint module, overall degree of freedom and degree of freedom of single leg. It is also a bid rejection clause marked with "\*", which may restrict or exclude prospective bidders from reasonably selecting the best cost-effective products.



In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it's suggested to delete relevant bidding requirement so as to ensure at least 3 mainstream domestic manufacturers like Softbank, Huaner, Hanghong Kejiao, etc. can meet this parameter requirement.

Suggestion: Remove the clause of “\*” and amend to: 2. Outer diameter of joint module  $\leq 80\text{cm}$ ; overall degree of freedom:  $\geq 8$ ; degree of freedom of single leg:  $\geq 2$ .

**回复:** 招标文件未作修改,按招标文件执行。

**Reply:** The bidding documents have not been modified. Please proceed with the execution according to the bidding documents.

### Question 13/问题 13

招标设备序号: 123, 名称: 人工智能轮式服务机器人平台

招标技术要求: \*3.自由度 $\geq 20$ 个, 手抓满足但不限于抓握功能;

问题: 该条技术要求中对自由度数量做出了具体下限量的要求, 且本条属标记为“\*”的废标条款, 存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则, 建议修改相关招标要求, 以保证至少有 softbank (软银)、幻尔、航虹科教等三个以上的主流国内厂商能够满足该参数要求。

建议: 去除本条“\*”要求并修改为: 3.手抓满足但不限于抓握功能;

S.N.:123, Name: AI wheeled service robot platform

Technical Requirements for :\*3. Degrees of freedom:  $\geq 20$ , at least meeting the requirements for grasping by hand;

Question: This technical requirement has a specific lower limit requirement for the



degrees of freedom, it is also a bid rejection clause marked with "\*\*", which may restrict or exclude prospective bidders from reasonably selecting the best cost-effective products. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it's suggested to delete relevant bidding requirement so as to ensure at least 3 mainstream domestic manufacturers like Softbank, Huaner, Hanghong Kejiao, etc. can meet this parameter requirement.

Suggestion: Delete "\*" and amend to: 3. Meet hand grip but is not limited to grip function;

**回复:** 招标文件未作修改,按招标文件执行。

**Reply:** The bidding documents have not been modified. Please proceed with the execution according to the bidding documents.

#### **Question 14/问题 14**

招标设备序号: 124, 名称: 智能制造 3C 产线实训平台

(1) 招标技术要求:

二、产品自动拾料工作单元

\*1.2 最大臂展半径 $\geq 580\text{mm}$ ; 位置重复精度 $\geq 0.01\text{mm}$

三、产品自动装配单元

\*1.2 最大臂展半径:  $\geq 580\text{mm}$ ; 位置重复精度 $\geq 0.01\text{mm}$ ;

\*2.2 最大臂展半径 $\geq 700\text{mm}$ ; 位置重复精度 $\geq 0.03\text{mm}$

四、产品自动检测及下料工作单元

1.机器人本体 1 台:

\*1.2 最大臂展半径 $\geq 580\text{mm}$ ; 位置重复精度 $\geq 0.01\text{mm}$



问题：（1）列举的上述招标技术要求中对最大臂展半径、位置重复精度做出了具体下限量的要求，且本条属标记为“\*”的废标条款，存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，建议修改相关招标要求，以保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：去除本条“\*”要求并修改为：

（2）招标技术要求：

#### 六、配套资源

1.提供与设备配套的工业机器人技术专业系列教材样本 $\geq 1$ 套：涉及工业机器人基础知识、安装、调试与维护、操作与编程、应用、仿真与离线编程、视觉技术、工装设计等（须提供教材封面及目录复印件（原件备查））；提供配套教材封面复印件并注明 ISBN 编号和 CIP 核字号；

2.以上教材的著作权均属于设备制造商，教材均由出版社公开出版发行；

问题：列举的上述招标技术要求中，要求提供教材样本，并要求著作权均属于设备制造商，且教材均由出版社公开出版发行。我认为设备的生产厂商作为生产企业不一定拥有具有自身著作权属性且已由出版社公开发行的教材。高校在选用教材时也不具备唯一性，而上述招标要求中对教材进行了详细介绍，在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能，为保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：取消提供教材的要求，删除上述参数。

（3）招标技术要求：

5.8 控制软件：工业机器人自动拧螺丝控制软件具有国家级计算机软件著作权登记证书等完全自主知识产权；能提供长期软件免费升级服务；上述提供相关证书影印件加盖原厂商公章。

7.配套的互联网教学平台及教学资源库系统具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章；



8.配套的工业机器人装配与维护 3D 虚拟仿真软件具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章；提供但不限于小型六自由度工业机器人、大型六轴工业机器人、水平关节工业机器人、并联蜘蛛手、五轴工业机器人等 5 种工业机器人本体进行软件虚拟仿真拆装的彩色截图，作为软件功能的佐证材料。

问题：列举的上述招标技术要求中，要求提供软件著作权证书复印件并加盖公章，一般而言，在中国境内销售软件产品必须有中国认定的软件著作权证书，我公司认为软件著作权登记证书通常用于生产厂商定期公告宣传自己的产品，并保护自身产品免受著作权方面的纷扰。在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能，为保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：取消提供软件著作权证书的要求，修改为：

5.8 控制软件：能提供长期软件免费升级服务；

7.配套的互联网教学平台及教学资源库系统，并能提供长期软件免费升级服务；

8.配套的工业机器人装配与维护 3D 虚拟仿真软件，并能提供长期软件免费升级服务；

S.N.:124, Name: Intelligent manufacturing 3C production line training platform

(1) Technical Requirements for:

II. Automatic picking unit

\*1.2 Maximum arm radius:  $\geq 580\text{mm}$ ; position repetition accuracy:  $\geq 0.01\text{mm}$

III. Automatic assembly unit

\*1.2 Maximum arm radius:  $\geq 580\text{mm}$ ; position repetition accuracy:  $\geq 0.01\text{mm}$ ;

\*2.2 Maximum arm radius:  $\geq 700\text{mm}$ ; position repetition accuracy:  $\geq 0.03\text{mm}$

IV. Automatic detection and cutting unit

1. One robot body:

\*1.2 Maximum arm radius:  $\geq 580\text{mm}$ ; position repetition accuracy:  $\geq 0.01\text{mm}$

Question: This technical requirement stipulates a specific lower limit requirement for the maximum arm radius and position repetition accuracy, and also are bid rejection clause marked with "\*", which may restrict or exclude prospective bidders from



reasonably selecting the best cost-effective products. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it ' s suggested to delete relevant bidding requirement so as to ensure at least 3 mainstream domestice manufacturers like Huahang Weishi, Keruite, Ligong Weiye, etc. can meet this parameter requirement.

Suggestion: Delete the clause of “\*” and amend to:

## II. Automatic picking unit

1.2 Maximum arm radius:  $\geq 300\text{mm}$ ; position repetition accuracy:  $\geq 0.1\text{mm}$

## III. Automatic assembly unit

1.2 Maximum arm radius:  $\geq 300\text{mm}$ ; position repetition accuracy:  $\geq 0.1\text{mm}$

2.2 Maximum arm radius:  $\geq 500\text{mm}$ ; position repetition accuracy:  $\geq 0.1\text{mm}$

## IV. Automatic detection and cutting unit

### 1. One robot body:

1.2 Maximum arm radius:  $\geq 300\text{mm}$ ; position repetition accuracy:  $\geq 0.01\text{mm}$ ”

## (2) Technical Requirements for:

## VI. Supporting resources

1. Provide at least one sample of industrial robot technology book: including industrial robot fundamentals, installation, commissioning and maintenance, operation and programming, application, simulation and offline programming, vision technology, tooling design and so on (submit the duplicates of the cover and contents of the teaching material and keep the originals for future reference). Provide the duplicates of the cover of the supporting teaching material, and marking the ISBN number and CIP approval number;

2. The copyright of the above teaching materials belongs to the equipment manufacturer, and the teaching materials are publicly issued.



Question: In the above technical requirements, it is required to provide samples of teaching materials, the copyright belongs to the equipment manufacturer and the teaching materials are published and distributed by the publishing house. Our company thinks that the equipment manufacturer, as a producer, does not necessarily have its own copyright attribute and has teaching materials published by the publishing house. Colleges and universities also do not have uniqueness in selecting textbooks, but while the above bidding requirements have detailed introduction to textbooks, there is the possibility of restricting or excluding the potential bidders to reasonably select the best cost-effective manufacturers in the bidding procedure. In order to ensure that at least three mainstream domestic manufacturers, such as Huahang Weishi, Keruite and Ligong Weiye, can meet the parameter requirements.

Suggestion: Cancel the requirement of provide textbooks and delete the above parameters.

(3) Technical Requirements for:

5.8 Control software: the automatic screw control software of the industrial robot has completely independent intellectual property rights such as national computer software copyright registration certificate. Provide long-term software upgrade service free of charge; and scanned copies of relevant certificates affixed with original manufacturer's official seal should be for reference.

7. The supporting online teaching platform and teaching resource library system has completely independent intellectual property rights such as national computer software copyright registration certificate, it also provides free long-term software upgrade service; it provides copies of relevant certificates affixed with official seal of the original manufacturer;

8. The supporting 3D virtual simulation software for industrial robot assembly and maintenance has fully independent intellectual property rights such as national computer software copyright registration certificate, and provide long-term free software upgrade service. Provide Photocopies of relevant certificates affixed with the



official seal of the original manufacture; Provide the color screenshots of software simulation of the assembly and disassembly of five industrial robot bodies shall be submitted, including but not limited to the small-sized six-degree-of-freedom, large-sized 6-axis industrial robot, horizontal-joint industrial robot, parallel spider hands and 5-axis industrial robot, as the evidences of software functions.

Question: In the listed technical requirements for bidding, it is required to provide a copy of the software copyright certificate and affix the official seal. Generally speaking, software products sold in China must have a software copyright certificate recognized by China. Our company believes that the software copyright registration certificate is usually used by manufacturers to regularly publicize their products and protect their products from copyright disputes. By doing so in the bidding process, there is the possibility of restricting or excluding the potential bidders to reasonably select the manufacturer with the best cost-effectiveness product. In order to ensure that at least three mainstream domestic manufacturers, such as AVIC Veritas, Kerit and Science and Technology Weiye, can meet the parameter requirements.

Suggestion: Cancel the requirement of provide software copyright certificate and amend it to:

5.8 Control software: Provide long-term software upgrade service free of charge

7. Supporting internet teaching platform and teaching resource database system, and can provide long-term free software upgrade service;

8. The supporting 3D virtual simulation software for industrial robot assembly and maintenance and provide long-term free software upgrade service.

**回复:** 招标文件未作修改,按招标文件执行。

**Reply:** The bidding documents have not been modified. Please proceed with the execution according to the bidding documents.

### **Question 15/问题 15**

招标设备序号: 125, 名称: 自主移动物流搬运机器人平台



(1) 招标技术要求:

一、移动机器人主机

\*3.负载 $\geq 50\text{kg}$ ;

问题: 该条技术要求中对负载做出了具体下限量的要求, 且本条属标记为“\*”的废标条款, 存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则, 保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议: 去除本条“\*”要求并修改为: 3.负载 $\geq 30\text{kg}$

(2) 招标技术要求:

二、导航扫描单元

\*1.360 度全方位扫描测距;

问题: 在导航扫描单元中对扫描测距进行了单一的角度限制, 且本条属标记为“\*”的废标条款, 存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则, 以保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议: 去除本条“\*”要求并修改为: 二、导航扫描单元

(3) 招标技术要求:

1.具备全方位扫描测距功能;

四、机器人自主定位导航系统

\*7.满足基于激光雷达的 SLAM 算法, 实现建立地图, 自主导航, 自主避障等功能;

问题: 在机器人自主定位导航系统对激光雷达算法进行了单一限制, 且本条属标记为“\*”的废标条款, 存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则,



以保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：去除本条“\*”要求并修改为：

7.激光雷达应实现建立地图，自主导航，自主避障等功能；

(4) 招标技术要求：

12.ROS 移动机器人软件具有国家级计算机软件著作权登记证书等完全自主知识产权，可提供全部开源程序代码供学习，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章；

13.计算机视觉软件具有国家级计算机软件著作权登记证书等完全自主知识产权，可提供全部开源程序代码供学习，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

**问题：**列举的上述招标技术要求中，要求提供软件著作权证书复印件并加盖公章，一般而言，在中国境内销售软件产品必须有中国认定的软件著作权证书，我认为软件著作权登记证书通常用于生产厂商定期公告宣传自己的产品，并保护自身产品免受著作权方面的纷扰。在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能，为保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：删除提供软件著作权证书的要求，主要对性能做出要求即可。

修改为：12. ROS 移动机器人软件可提供全部开源程序代码供学习，并能提供长期软件免费升级服务；

S.N.:125, Name: Autonomous mobile handling robot platform

14. (1) Technical Requirements for:

I. Mobile robot host

\*3. Load:  $\geq 50\text{kg}$ ;

Question: This technical requirement has specific lower limit requirements for the load, and this clause is a bid rejection clause marked with "\*", which may restrict or exclude prospective bidders from reasonably selecting the best cost-effective manufacturer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of



China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it's suggested to delete relevant bidding requirement so as to ensure at least 3 mainstream domestic manufacturers like Huahang Weishi, Keruite, Ligong Weiye, etc. can meet this parameter requirement.

Suggestion: Remove the "\*" and amend to: Load:  $\geq 30\text{kg}$ ;

(2) Technical Requirements for:

II. Navigation scanning unit

\*1. 360-degree omni-directional scanning range;

Question: In the navigation scanning unit, there is a single angle restriction on scanning and ranging, and this is a bid rejection clause marked with "\*", which may restrict or exclude potential bidders from reasonably selecting the best cost-effective product. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, at least three mainstream domestic manufacturers such as Huahang Weishi, Keruite and Ligong Weiye should be ensured to meet the parameter requirements.

Suggestion: Delete the "\*" and amend to: II. Navigation scanning unit

(3) Technical Requirements for:

I. All-directional scanning range function;

IV. Autonomous robot positioning and navigation system

\*7. LiDAR-based SLAM algorithm for mapping, autonomous navigation, autonomous obstacle avoidance and the like;



Question: There is a single restriction on the lidar algorithm in the robot autonomous positioning and navigation system, and this clause is a bid rejection clause marked with "\*", which may restrict or exclude potential bidders from reasonably selecting the best cost-effective manufacturer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, at least three mainstream domestic manufacturers such as Huahang Weishi, Keruite and Ligong Weiye should be ensured to meet the parameter requirements.

Suggestion: Delete "\*" and amend to:

7. With the functions of LiDAR-based mapping, autonomous navigation, autonomous obstacle avoidance and the like;

(4) Technical Requirements for:

12. ROS mobile robot software has completely independent intellectual property rights such as the national computer software copyright registration certificate. All open source program codes shall be provided for learning. Software upgrade services shall be provided free of charge for a long time. Duplicates of relevant certificates affixed with official seal of original manufacturer shall be submitted.

13. Computer vision software has completely independent intellectual property rights such as the national computer software copyright registration certificate. All open source program codes shall be provided for learning. Software upgrade services shall be provided free of charge for a long time. Duplicates of relevant certificates affixed with official seal of original manufacturer shall be submitted.

Question: In the listed technical requirements for bidding, it is required to provide a copy of the software copyright certificate and affix the official seal. Generally speaking, software products sold in China must have a software copyright certificate recognized in China. Our company believes that the software copyright registration certificate is



usually used by manufacturers to regularly publicize their products and protect their products from copyright disputes. Requiring certificates in the bidding may restrict or exclude prospective bidders from reasonably selecting the best cost-effective product manufacturer. In order to ensure that at least three mainstream domestic manufacturers, like Huahang Weishi, Keruite, Ligong Weiye can meet the parameter requirements.

Suggestion: Delete the requirement of providing software copyright certificate, and only make requirements for performance.

Amend to: 12. ROS mobile robot software can provide all open source program codes for learning and provide long-term software upgrade services free of charge.

**回复：**招标文件未作修改,按招标文件执行。

**Reply:** The bidding documents have not been modified. Please proceed with the execution according to the bidding documents.

### **Question 16 /问题 16**

招标设备序号：126，名称：人工智能柔性协作教学平台

(1) 招标技术要求：

1 机器人本体

\*1.2 负载 $\geq 5\text{kg}$ ;

\*1.5 重复精度： $\pm 0.1\text{mm}$ ;

问题：列举的上述技术要求中对负载、重复精度做出了具体下限量的要求，且本条属标记为“\*”的废标条款，存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，为保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：去除本条“\*”要求并修改为：

1.2 负载 $\geq 3\text{kg}$ ;

1.5 重复精度： $\pm 0.5\text{mm}$ ;



## 2. 机器人控制器

### (2) 招标技术要求：

2.7 设备生产厂商通过认证范围覆盖该类设备设计、生产等过程的 ISO9001 质量管理体系认证、ISO14001 环境管理体系认证及 ISO45001 职业健康安全管理体系认证，以保证设备设计及其制造过程的质量、环保性及职业健康安全。

问题：列举的上述 2. 机器人控制器 2.7 中要求提供的相关资质证明文件，属于对厂商商务资格条件的要求，与产品本身功能及技术无关，要求厂商同时具备要求，存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：删除上述招标技术要求。

### (3) 招标技术要求：

#### 二、快换装置

4. 快换装置具有国家专利，确保产品及技术的先进性，同时可避免第三方知识产权纠纷及法律诉讼，专利权的所有权为设备厂商所有。提供相关证书影印件，提供证书原件及官方网站备查。

问题：上述招标要求二、快换装置 4. 快换装置具有国家专利，专利作为某生产厂商专有技术，在招标过程中使用该条款存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：修删除上述招标要求。

### (4) 招标技术要求：

#### 三、开源智能视觉检测系统

2.10 工业机器人视觉软件具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章；



2.11 提供视觉技术相关的配套教材封面及目录复印件（原件备查）并注明 ISBN 编号和 CIP 核字号，教材的著作权均属于设备制造商。

问题：列举的上述招标技术要求中，要求提供教材样本，并要求著作权均属于设备制造商，且教材均由出版社公开出版发行。我认为设备的生产厂商作为生产企业不一定拥有具有自身著作权属性且已由出版社公开发行的教材。高校在选用教材时也不具备唯一性，而上述招标要求中对教材进行了详细介绍，在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能，为保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：删除“2.10”、“2.11”相关软著及提供教材的要求。

（4）招标技术要求：

#### 五、自动拧螺丝装配系统组件

10.控制软件：机器人自动拧螺丝控制软件具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

#### 六、自动分拣插件组件

9.控制软件：机器人自动分拣插件控制软件具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

#### 十二、ROS 开源案例

8.ROS 六轴机器人软件具有国家级计算机软件著作权登记证书等完全自主知识产权，可提供全部开源程序代码供学习，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

#### 十三、基于 Python/C++开发案例

8.协作机器人软件具有国家级计算机软件著作权登记证书等完全自主知识产权，可提供全部开源程序代码供学习，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

问题：列举的上述招标技术要求中，要求提供软件著作权证书复印件并加盖公章，一般而言，在中国境内销售软件产品必须有中国认定的软件著作权证书，我公司



认为软件著作权登记证书通常用于生产厂商定期公告宣传自己的产品，并保护自身产品免受著作权方面的纷扰。在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能，为保证至少有华航唯实、科瑞特、理工伟业等三个以上的主流国内厂商能够满足该参数要求。

建议：取消提供软件著作权证书的要求，删除上述参数。

S.N.:126, Name: AI flexible collaborative teaching platform

(1) Technical Requirements for:

1. Robot body

\*1.2 Load  $\geq 5\text{kg}$ ;

\*1.5 Repetition accuracy:  $\pm 0.1\text{mm}$

Question: This technical requirement has specific lower limit requirements for the load repetition accuracy, and this clause is also a bid rejection clause marked with "\*", which may restrict or exclude prospective bidders from reasonably selecting the best cost-effective manufacturer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, in order to ensure at least 3 mainstream domestic manufacturers like Huahang Weishi, Keruite, Ligong Weiye, etc. can meet this parameter requirement.

Suggestion: Remove "\*" and amend to:

1.2 Load  $\geq 3\text{kg}$ ;

1.5 Repetition accuracy:  $\pm 0.5\text{mm}$

2. Robot controller

(2) Technical Requirements for:

2.7. Equipment manufacturers comply with ISO9001 quality management system certification, ISO14001 environmental management system certification and ISO45001 occupational health and safety management system certification for equipment design



and production process to ensure the quality, environmental protection and occupational health and safety of equipment design and manufacturing process.

Question: The relevant qualification documents required in 2. Robot controller and 2.7 are the requirements for the business qualification of the manufacturer, so they are not related to the function and technology of the product itself. Manufacturers required to have the requirements at the same time may restrict or exclude the potential bidders from reasonably selecting the best cost-effective product. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, at least ensured three mainstream domestic manufacturers, like Huahang Weishi, Keruite, Ligong Weiye, can meet this parameter requirement.

Suggestion: Delete above bidding technical requirements.

(3) Technical Requirements for:

II. Quick change tool

4. Quick change tool has national patents to ensure the advancement of products and technologies, while avoiding third-party intellectual property disputes and legal proceedings. The ownership of the patent rights belongs to the equipment manufacturer. Provide the copies of relevant certificates and keep the original certificates and official website for future reference.

Question: As to above bidding requirement “II. Quick change tool and item 4. Quick change tool has a national patent”, the patent is the proprietary technology of a manufacturer, the use of this clause in the bidding process may restrict or exclude the potential bidders from reasonably selecting the best cost-effective product manufacturer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic



of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, at least three mainstream domestic manufacturers, like Huahang Weishi, Keruite, Ligong Weiye that meet the parameter requirements should be ensured.

Suggestion: Remove above bidding technical requirements.

(4) Technical Requirements for:

### III. Open source intelligent visual inspection system

2.10 Industrial robot vision software has completely independent intellectual property rights such as national computer software copyright registration certificate, it also provides free long-term software upgrade service; it provides photocopies of relevant certificates affixed with the official seal of the original manufacturer;

2.11 Provide the duplicates of the cover and contents of the supporting textbooks related to vision technology (keep originals for reference), and mark the ISBN number and CIP approval number. The copyright of textbooks shall belong to equipment manufacturers..

Question: In the above technical requirements, it is required to provide samples of teaching materials, the copyright belongs to the equipment manufacturer and the teaching materials are published and distributed by the publishing house. Our company thinks that the equipment manufacturer, as a manufacturing enterprise, does not necessarily have its own copyright attribute and has been published by the publishing house. Colleges and universities also do not have uniqueness in selecting textbooks, but while the above bidding requirements have detailed introduction to textbooks, there is the possibility of restricting or excluding the use of potential bidders to reasonably select the best cost-effective product in the bidding procedure. In order to ensure that at least three mainstream domestic manufacturers, such as Huahang Weishi, Keruite and Ligong Weiye, can meet the parameter requirements.



Suggestion: Delete “2.10”, “2.11” relevant requirements for providing software copyright and teaching materials.

(4) Technical Requirements for:

V. Components of automatic screw assembly system

10. Control software: the automatic screw control software of the robot has completely independent intellectual property rights such as national computer software copyright registration certificate. Provide long-term software upgrade service free of charge; and the duplicates of relevant certificates affixed with the official seal of the original manufacturer.

VI. Automatic sorting and plugging assembly

9. Control software: the automatic sorting and plugging software of the robot has completely independent intellectual property rights such as national computer software copyright registration certificate. Provide long-term software upgrade service free of charge; and the duplicates of relevant certificates affixed with the official seal of the original manufacturer.

XII. ROS open source cases

8. ROS 6-axis robot software has completely independent intellectual property rights such as the national computer software copyright registration certificate. All open source program codes shall be provided for learning. Software upgrade services shall be provided free of charge for a long time. Duplicates of relevant certificates affixed with the official seal of the original manufacturer.

XIII. Development cases based on Python/C++

8. Collaborative robot software has completely independent intellectual property rights such as the national computer software copyright registration certificate. All open source program codes shall be provided for learning. Software upgrade services shall be provided free of charge for a long time. Duplicates of relevant certificates affixed with the official seal of the original manufacturer.



Question: In the above technical requirements, it is required to provide a copy of the software copyright certificate and affix the official seal. Generally speaking, software products sold in China must have the software copyright certificate recognized in China. Our company believes that the software copyright registration certificate is usually used by manufacturers to regularly publicize their products and protect their products from copyright disputes. If this requirement is put forward in the bidding, there will be the possibility of restricting or excluding the potential bidders to reasonably select the manufacturer with optimal cost-effective products. In order to ensure that at least three mainstream domestic manufacturers, such as Huahang Weishi, Keruite, Ligong Weiye, can meet the parameter requirements.

Suggestion:: Cancel the requirement of provide software copyright certificate and delete the above parameters.

S.N.:100 ,Name: Four-way server

(1) Technical Requirements for ” 1. International and domestic mainstream brands, with independent capability of product research and development and production, non-OEM products. X86 server shipment in China’s market has ranked top three in the past two years according to IDC (a valid certificate shall be provided). 4-way rack-mounted servers, with height  $\geq 4U$ . It is required to configure  $\geq 4$  CPU processors of X86 architecture; CPU processor configuration requirements number of cores  $\geq 18$ , number of threads  $\geq 36$ , basic frequency  $\geq 2.50\text{GHz}$ , maximum turbo frequency  $\geq 3.80\text{GHz}$ , cache  $\geq 24.75\text{MB}$ ;

Question: IDC's ranking of shipment volume does not directly indicate the quality and technical level of products, As a technical requirement, it is possible to limit the brand. In order to make the bidding parameters more consistent with the principle that the product is not the only direction required for the preparation of bidding documents in the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Bidding of



Mechanical and Electrical Products. Ensure that the parameters can satisfy at least three manufacturers including Inspur, Lenovo and H3C at the same time.

Suggestion: Amend to "1. International and domestic mainstream brands, with the R&D and production capacity of independent products, non-OEM OEM products, 4-way rack servers, server height  $\geq 4U$ , this time it is required to configure  $\geq 4$  X86 CPU processors, CUP processor configuration requirements: number of cores  $\geq 18$ , number of threads  $\geq 36$ , basic frequency  $\geq 2.50\text{GHz}$ , maximum RF frequency  $\geq 3.80\text{GHz}$ , cache  $\geq 24.75\text{MB}$ ;"

(2) Technical Requirements for " 2. Actual memory configured  $\geq 256\text{GB}$  2933MHz DDR4,  $\geq 48$  memory slots provided locally, provide Advanced ECC advanced memory protection and online backup mode. LRDIMM and UDIMM memory can be configured, supporting a maximum of 18TB memory. Provide a copy of the certificate for the test method of the memory ECC function issued by the China National Intellectual Property Administration or the National Copyright Administration;"

Question: Required to provide certificates issued by the China National Intellectual Property Administration or the Copyright Office for specific functions and configurations that the possibility of a unique tendency. In order to make the bidding parameters more consistent with the principle that the product is not the only direction required for the preparation of bidding documents in the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Bidding of Mechanical and Electrical Products. Ensure that the parameters can satisfy at least three manufacturers including Inspur, Lenovo and H3C at the same time.

Suggestion: Amend to "2. The actual memory allocation is  $\geq 256\text{GB}$  2933MHz DDR4, and  $\geq 48$  memory slots are provided locally, with Advanced ECC advanced memory protection technology and online standby mode;"

(3) Technical Requirements for " 2. Actual memory configured  $\geq 256\text{GB}$  2933MHz DDR4,  $\geq 48$  memory slots provided locally, provide Advanced ECC advanced memory protection and online backup mode. LRDIMM and UDIMM memory can be



configured, supporting a maximum of 18TB memory. Provide a copy of the certificate for the test method of the memory ECC function issued by the China National Intellectual Property Administration or the National Copyright Administration;”

Question: Among the listed technical requirements for bidding, required to provide the screenshot proof of the official website. Our company believes that for manufacturers of similar products, the focus of product publicity is not the same, and the external publicity channel of products is not limited to the official website, and the screenshot of the official website is required, which may restrict or exclude potential bidders from reasonably selecting the best cost-effective manufacturer. Ensure that the parameters can satisfy at least three manufacturers including Inspur, Lenovo and H3C at the same time.

Suggestion: Delete the requirement to provide screenshots of the official website, Mainly make requirements for performance.

( 4 ) Technical Requirements for ” 4. The motherboard integrates SATA RAID controller, supporting RAID 0/1/5/10. For this Project, configure  $\geq 1$  RAID card, 12Gbps SAS disk array controller,  $\geq 2$ GB cache, with cache data protection. If the system hard disk fails after being made into a RAID5 disk array, all data in the hard disk system is required to be available and recoverable. The system hard disk adopts effective technology to accelerate RAID5 recovery. Provide a copy of the certificate for the accelerated RAID5 recovery method issued by the China National Intellectual Property Administration or the National Copyright Administration;”

Question: The certificate issued by the China National Intellectual Property Administration or the Copyright Office that requires the provision of specific functions may be uniquely biased. In order to make the bidding parameters more consistent with the principle that the product is not the only direction required for the preparation of bidding documents in the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Bidding of Mechanical and Electrical Products. Ensure that the



parameters can satisfy at least three manufacturers including Inspur, Lenovo and H3C at the same time.

Suggestion: Amend to "4. The motherboard integrates SATA RAID controller with RAID 0/1/5/10. This time, it is configured with  $\geq 1$  array card, 12Gbps SAS disk array controller,  $\geq 2$ GB cache, and cache data protection"

(5) Technical Requirements for " 5.  $\geq 6$  PCI-e 3.0 full-height slots, expandable to  $\geq 18$  full-height standard PCI-e slots; support 4 enterprise-class double-width or 8 enterprise-class single-width GPUs;"

Question: According to the market, 4 enterprise-level double-width or 8 enterprise-level single-width GPUs are the unique technical parameters of Inspur, which cannot be satisfied by mainstream manufacturers such as Lenovo, H3C, Huawei and Ruijie. In order to make the bidding parameters more consistent with the principle that the product is not the only direction required for the preparation of bidding documents in the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Bidding of Mechanical and Electrical Products. Ensure that the parameters can satisfy at least three manufacturers including Inspur, Lenovo and H3C at the same time.

Suggestion: Amend to "5.  $\geq 6$  PCI-e 3.0 full-height slots can be expanded to  $\geq 14$  full-height standard PCI-e slots;"

(6) Technical Requirements for " 9. Maintenance: Support LCD monitoring, and monitoring and management of Bluetooth connected mobile terminal. Provide official website links and screenshots affixed with the official seal of the manufacturer;"

Question: Through market understanding, Bluetooth docking mobile terminal monitoring and management is Inspur patented technology, and mainstream manufacturers such as Lenovo, H3C, Huawei, and Ruijie cannot meet this requirement. In order to make the bidding parameters more consistent with the principle that the product is not the only direction required for the preparation of bidding documents in the Regulations for the Implementation of the Bidding Law of the People's Republic of



China and the Measures for the Implementation of the International Bidding of Mechanical and Electrical Products. Ensure that the parameters can satisfy at least three manufacturers including Inspur, Lenovo and H3C at the same time.

Suggestion: Amend to "9. Maintenance: at least LCD monitoring;"

(7) Technical Requirements for ” \*10. To ensure information security and effectively reduce the security risk of user privacy, the manufacturer is required to provide dual certification of ISO27001 Information Security Management System and ISO27701 Privacy Information Management System in the server field. For the above certification, a copy of the certificate affixed with the official seal of the manufacturer should be provided;”

Question: The above requirements belong to the requirements for the business qualification of the manufacturer, and are not related to the function and technology of the product itself. The manufacturer is required to have the requirements at the same time, which may restrict or exclude the potential bidders from reasonably selecting the best cost-effective manufacturer. In order to make the bidding parameters more consistent with the principle that the product is not the only direction required for the preparation of bidding documents in the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Bidding of Mechanical and Electrical Products. Ensure that the parameters can satisfy at least three manufacturers including Inspur, Lenovo and H3C at the same time.

Suggestion: Delete the above requirements

(8) Technical Requirements for ” 11. To ensure standard production of the server and storage device, testing and warehousing management, reduce the adverse effects of electrostatic discharge on the device, and improve product quality and reliability, the manufacturer should pass the certification under IEQESD electrostatic protection standard and provide the relevant certificate;”

Question: The equipment manufacturer is required to pass the electrostatic protection standard certification of a specific organization. There is a unique tendency. According



to the market inquiry, domestic mainstream manufacturers of similar products, such as H3C, DELL, Lenovo, Huawei and H3C, cannot provide the ESD certification certificate of IEQ. In order to make the bidding parameters more consistent with the principle that the product is not the only direction required for the preparation of bidding documents in the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Bidding of Mechanical and Electrical Products. Ensure that the parameters can satisfy at least three manufacturers including Inspur, Lenovo and H3C at the same time.

Suggestion: Delete the above requirements.

(9) Technical Requirements for ” 12. If the manufacturer joins the three major open computing organizations (OCP ODCC OPEN19) at the same time, it should provide a screenshot of the official website of such open organizations affixed with the official seal of the manufacturer.”” 13. Service: Provide door-to-door service of original factory engineers for OCP ODCC OPEN19) at the same time, it should provide a screenshot of the official website of such open organizations affixed with the offimanufacturer for the project;”

Question: Inspur Information is the only manufacturer in the world that has joined the three major open computing organizations (OCP ODCC OPEN19) at the same time. In order to make the bidding parameters more consistent with the principle that the product is not the only direction required for the preparation of bidding documents in the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Bidding of Mechanical and Electrical Products. Ensure that the parameters can satisfy at least three manufacturers including Inspur, Lenovo and H3C at the same time.

Suggestion: Delete the above requirements.

**回复：**招标文件未作修改,按招标文件执行。

**Reply:** The bidding documents have not been modified. Please proceed with the



execution according to the bidding documents.

**Question 17 / 问题 17**

问题：在设备序号 128 至 134 项招标技术要求中，要求提供功能截图并加盖公章。我认为就同类产品厂商而言，产品的技术特点以及宣传侧重点并不一样，在功能界面设计结构无法完全达到完全一致，要求提供功能截图，存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，建议删除提供截图的证明要求，以保证至少有浪潮、博创智联、文圣科技等三个以上的主流国内厂商能够满足该参数要求。

建议：删除相关要求提供截图的参数。

Question :There are many requirements for providing software copyright certificates in the bidding technical requirements of equipment item 128 to 134. Our company believes that for manufacturers of similar products, the technical characteristics and publicity focus of the products are different, and the design structure of the functional interface cannot be completely consistent, so required to provide functional screenshots may restrict or exclude potential bidders from reasonably selecting the best cost-effective manufacturer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it is suggested to delete the requirements for providing the screenshots so as to ensure that at least three mainstream domestic manufacturers, like Inspur, Siwo, Bochuang Zhilian, Wensheng Keji, can meet the parameter requirements.

Suggestion: Delete the relevent requirements of providing the screenshots.

回复：招标文件有修改，详见补遗（十二）。



**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

**Question 18/问题 18**

问题：在设备序号 135 至 140 项招标技术要求中，要求提供软件著作权证书复印件并加盖公章，一般而言，在中国境内销售软件产品必须有中国认定的软件著作权证书，我公司认为软件著作权登记证书通常用于生产厂商定期公告宣传自己的产品，并保护自身产品免受著作权方面的纷扰。在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，建议删除提供软件著作权证书要求，以保证至少有 H3C、华科云创、联创中控等三个以上的主流国内厂商能够满足该参数要求。

建议：删除提供软件著作权证书的要求，主要对性能做出要求即可。

Question :There are many requirements for providing software copyright certificates in the bidding technical requirements of equipment item 135 to 140. Generally speaking, software products sold in China must have a software copyright certificate recognized by China. Our company believes that the software copyright registration certificate is usually used by manufacturers to regularly publicize their products and protect their products from copyright disputes. Required certificates in the bidding may restrict or exclude prospective bidders from reasonably selecting the best cost-effective product manufacturer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it is suggested to delete the requirements for providing the software copyright certificate, so as to ensure that at least three mainstream domestic manufacturers, like H3C, Huake Yunchuang, Lianhuang Zhongkong, etc.can meet the parameter requirements.



Suggestion: Delete the requirement of providing the software copyright certificate, and only make requirements for performance.

回复：招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

### **Question 19/问题 19**

问题：在设备序号 142 至 144 项招标技术要求中，招标参数唯一倾向于某生产厂商，为了使招标参数更加符合《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则，建议修改招标参数，以保证至少有普源精电、鼎阳科技、优利德科技等三个以上的主流国内厂商能够满足该参数要求。

建议：重新修订招标技术要求。

Question: In the bidding technical requirements of equipment S.N. 142 to 144, the parameters are uniquely in favour of a certain producer. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents, it is suggested to modify the bidding parameters so as to ensure that at least three mainstream domestic manufacturers, like Puyuan Jingdian, Dingyang Keji, Youlide Keji, can meet the parameter requirements.

Suggestion: Revise the bidding technical requirements.

回复：招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.



**Question 20/问题 20**

招标设备序号：145，名称：多通道示波器

招标技术要求：

14.接口包含但不限于：USB Host 、USB Device、LAN(LXI)、HDMI、TRIG OUT、GPIB(USB-GPIB)等；

15.满足但不限于 VGA 输出、10MHz 输入/输出、Aux 输出；

问题：经查询，列举的上述招标技术要求内容均非国标要求统一标准，各产品生产厂商在设计之初考虑的更多为产品功能上的实现，在接口设计、信号输出等内容有所不同。上述对于接口的要求过于详细，存在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能。

建议：删除上述两项招标要求。

S.N.:145, Name: Multi-channel oscilloscope

Technical Requirements for:

14. Interfaces include but are not limited to: USB Host, USB Device, LAN (LXI), HDMI, TRIG OUT, GPIB (USB-GPIB), etc.;

15. Include VGA output, 10MHz input/output, Aux output;

**回复：**招标文件有修改，详见**补遗（十二）**。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

**Question 21/问题 21**

招标设备序号：146，名称：函数/任意波形发生器

招标技术要求：

8.闪存：满足但不限于配置 $\geq 1$  GB；

问题：经查询，该类产品均未能满足该项要求，是否为笔误？

建议：删除该项招标要求。

20.S.N.: 146, Name: Function/arbitrary waveform generator

18、Technical Requirements for:



8. Flash memory:  $\geq 1$  GB;

Question: After inquiry, these products failed to meet this requirement. Is it a clerical error?

Suggestion: Delete this requirement.

回复: 招标文件有修改, 详见补遗(十二)。

Reply: There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

### Question 22/问题 22

招标设备序号: 148, 名称: 数字扩音系统

招标技术要求:

#### 一、功放

1.采用一体化设计, 集成: D类数字功放, 红外线无线接收模块, 红外传感器, 反馈抑制模块、扬声器于一体。须提供具有 CNAS 标志的“检验报告”进行证明;

4.超广角多阵列式红外线接收管 $\geq 24$ 颗, 须提供具有 CNAS 标志的“检验报告”进行证明。

17.提供国家认可的 CCC 证书, 产品检验报告, 红外线音频技术专利证书并加盖生产厂商公章;

18.提供省级或以上“高新技术产品证书”;

#### 二、红外话筒

1.无线传输制式: 红外线(波长 850nm), 高灵敏度红外线发射管 $\geq 6$ 颗, 须提供具有 CNAS 标志的“检验报告”进行证明;

13.提供外观专利证书, 并加盖生产厂商公章;

14.提供具有 CNAS 标志的“防火等级检验报告”;

15.获得省级或以上“高新技术产品证书”;

#### 三、红外无线音频传输器

2.无线传输制式: 红外线(波长 850nm), 高灵敏度红外线发射管 $\geq 6$ 颗, 须提供具有 CNAS 标志的“检验报告”进行证明;



6.提供国家认可的产品检验报告，并加盖生产厂商公章；

#### 四、充电器

1.标配两个充电位，且每个充电位都能给两种不同形状话筒充电（颈挂水滴形话筒、手持话筒），且两种话筒可以互换充电位充电。须提供具有CNAS标志的“检验报告”进行证明；

问题：列举的上述招标技术要求提到的功放、红外话筒、红外无线音频传输器、充电器等产品作为市场通用产品，增加检测报告、专利证书、产品证书等要求具有唯一倾向性，经了解同类产品主流品牌例如：先科、飞利浦、康佳等主流品牌无法全部满足所述的诸多要求，缩小了投标人在产品甄选的范围，或将增加项目投资及采购成本。为了使招标参数更加符合《中华人民共和国招投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件编制要求产品非唯一指向的原则。

建议：删除上述关于检测报告、专利证书、产品证书等要求，仅保留功能要求即可。

S.N.:148, Name: Digital PA system

Technical Requirements for:

#### I. Power amplifier

1. Integrated with: Class D digital power amplifier, infrared wireless receiving module, infrared sensor, feedback suppression module, and speaker. The "inspection report" with the CNAS logo must be provided;

4. Ultra-wide-angle multi-array infrared receiving tubes  $\geq 24$ , the "inspection report" with the CNAS logo must be provided;

17. Provide the nationally recognized CCC certificate, product inspection report, infrared audio technology patent certificate and affixed with official seal of the manufacturer;

18. Provide provincial or above "high-tech product certificate";

#### II. Infrared receiver



1. Wireless transmission system: Infrared (wavelength 850nm), high-sensitivity infrared emission tube  $\geq 6$ , provided with "inspection report" with the CNAS logo;
13. Provide the appearance patent certificate and affix the official seal of the manufacturer;
14. Provide "fire protection grading inspection report" with the CNAS logo;
15. Certified with provincial or above "high-tech product certificate";

### III. Infrared wireless audio transmitter

2. Wireless transmission system: Infrared (wavelength 850nm), high-sensitivity infrared emission tube  $\geq 6$ , provided with "inspection report" with the CNAS logo;
6. Provide the nationally recognized certificate affixed with official seal of the manufacturer;

### IV. charger

1. For standard charger, there are two charging positions, and each can charge two different shapes of microphones (neck-hanging drop-shaped microphone, hand-held microphone), and the two microphones can be charged with interchangeable charging positions. The "inspection report" with the CNAS logo must be provided;

Question: The listed power amplifier, infrared microphone, infrared wireless audio transmitter, charger and other products mentioned in the above technical requirements for bidding are common products in the market, however, the addition of test reports, patent certificates, product certificates and other requirements is uniquely in favour of a specified product. After inquiry, we have learned that the mainstream brands of similar products, such as Xianke, Philips, Konka and other mainstream brands, can not fully meet many of the requirements described, reducing the scope of product selection for bidders, or will increase the project bidding and procurement costs. In order to make the bidding parameters more in line with the principles of the Regulations for the Implementation of the Bidding Law of the People's Republic of China and the Measures for the Implementation of the International Tendering and Bidding of Mechanical and Electrical Products that a certain product should not be exclusively specified in the establishment of bidding documents.



Suggestion: Delete the required test reports, patent certificates, product certificates etc. and only keep the functional requirement.

回复：招标文件有修改，详见补遗（十二）。

Reply: There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

### Question 23/问题 23

招标设备序号：166，名称：精品录播跟踪一体服务器

（1）招标技术要求：

一、硬件功能参数

4.支持不少于4个SDI接口、4个CVBS视频接口、1个Ref同步接口、1个HDMI、1个VGA、1个DVI、1个DP、3个Mini-DP、1个3.5mm立体声输入、1个3.5mm立体声输出接口；

5.为满足设备扩展，USB3.0接口 $\geq 8$ 个，具备同时连接鼠标、键盘用于本地导播；具备连接U盘/移动硬盘用于快速拷贝带走；具备连接导播摇杆控制台。 $\geq 1$ 个10/100/1000M自适应网口，具备 $\geq 1$ 个视音频接口扩展位；

问题：列举的上述第4、5项招标技术要求，随着科技的进步，传统的CVBS、REF等接口已经被新型的HDMI、TYPE-C等接口取代，且招标要求的接口数量并不适用于所有制造商品牌。此外，本项目技术评议标准对设备技术规范一般性条款不满足项数有严格的要求，为保证至少有超星、希沃、文香等三个以上的主流国内厂商能够满足该参数要求。

建议：删除该两项参数要求。

（2）招标技术要求：

6.采集卡需通过国家广播电影电视总局测试合格（需提供广电总局颁发的测试报告复印件）；

问题：列举的上述第6项招标技术要求，由于采集卡属于民用消费级产品，主流消费平台均可以购买，要求提供测试报告有排他性、倾向性，违反《中华人民共和国招标投标法实施条例》以及《机电产品国际招标投标实施办法》中对招标文件



编制要求产品非唯一指向的原则，为保证至少有超星、希沃、文香等三个以上的主流国内厂商能够满足该参数要求。

建议：删除该项参数要求。

(3) 招标技术要求：

7.支持 $\geq 2$ 路 Mini-DP 电影画面输出接口，满足但不限于直播画面输出到大屏、非编等设备中，无延迟、非网络接口；分辨率 $\geq 1920 \times 1080$ ；可分别支持本地导播画面输出和录制的最终画面输出到观摩室显示大屏中；

问题：列举的上述第 7 项招标技术要求中，HDMI 接口已经可以达到 4K 分辨率的视频传输，DP 接口一般用于专业级影视拍摄、传输，最高可支持 8K 分辨率的视频传输，但是目前广泛应用的是 4K，对于 DP 口来说是性能溢出。该项要求存在限制或排斥潜在制造商的问题，应保证至少有超星、希沃、文香等三个以上的主流国内厂商能够满足该参数要求。

建议：删除该项参数要求。

(4) 招标技术要求：

11.录播主机应通过国家电子计算机质量监督检测中心严格检测，平均无故障工作时间 (MTBF)  $\geq 25000$  小时（需提供检测证书复印件）。

二、录播系统功能参数

7.实现多路信号录制，支持  $1920 \times 1080$  MPEG2-I 100M 高质量格式录制 $\geq 5$ 路输入画面；支持  $1920 \times 1080$  MPEG2\_IBP 25M  $\geq 5$ 路资源通道和 $\geq 1$ 路 H.264/H.265 High Profile 2M MP4（可直播）的最终输出画面；（提供软件截图，加盖厂家公章）

17.充分满足教师 PPT 课件录制，可录制教师移动鼠标进行教学的鼠标移动轨迹，以便视频课程能还原课堂场景。支持无压缩高码率的 iVGA 录制，通过安装在教师机的采集软件，实现将教师机视频信号传输到录播主机；

问题：列举的上述二、录播系统招标技术要求中第 17 项由于产品升级传统的 iVGA 录制已经被逐步落后淘汰。

建议：修改为：17.充分满足教师 PPT 课件录制，可录制教师移动鼠标进行教学的鼠标移动轨迹，以便视频课程能还原课堂场景。支持无压缩高码率的 iVGA 或 HDMI 录制，通过安装在教师机的采集软件，实现将教师机视频信号传输到录播主机；



(5) 招标技术要求:

19.录播系统需提供国家版权局出具的录播系统软件著作权证书复印件及软件登记测试报告复印件。

三、跟踪服务软件功能需求（满足但不限于）

3.支持区域屏蔽功能，避免这个区域内的人员干扰录课，提高系统识别效果（需提供此功能软件界面配置截图）

10.为了满足不同身高的老师，都能够顺利的完成课程录制，系统可根据老师身高，自动调整、适应并给出合理构图，使课程画面平稳，无需人工调整（身高自适应软件著作权证书复印件）；

11.需提供国家版权局出具的跟踪系统软件著作权证书复印件及软件产品测试报告复印件。

问题：列举的上述招标技术要求中，要求提供功能截图、软件著作权证书影印件、检测报告并加盖公章。我认为就同类产品厂商而言，每家使用的标准不一样，在功能描述细节上不一致，并且本项目技术评议标准对产品技术规范一般性条款不满足项数有所要求，存在限制或排斥潜在投标人合理选择最优性价比制造商的可能，为保证至少有超星、希沃、文香等三个以上的主流国内厂商能够满足该参数要求。

建议：删除提供截图、软件著作权证书、检测报告的要求，主要对性能做出要求即可。

S.N.:166, Name: High-quality recording and tracking integrated server

(1) Technical Requirements for:

I. Hardware parameters

4. Support no less than 4 SDI ports, 4 CVBS video ports, 1 Ref sync port, 1 HDMI, 1 VGA, 1 DVI, 1 DP, 3 Mini-DP, 1 3.5mm stereo input, and 1 3.5mm stereo output interface;

5. For better expandability, the number of USB 3.0 interfaces  $\geq 8$ , which can be connected with mouse and keyboard at the same time; it can be connected to flash drive/mobile HDD for better portability; and it can be connected to joystick console.  $\geq 1$  10/100/1000M self-adaptive ethernet port, and  $\geq 1$  video and audio interface;



Question: For the technical requirements listed in the item 4 and 5, with the progress of science and technology, traditional CVBS, REF and other interfaces have been replaced by new HDMI, TYPE-C and other interfaces, so the number of interfaces required in the bidding documents is not applicable to all manufacturers' brands. In addition, the technical evaluation standard of the project has strict requirements on the number of items that are not met by the general terms of the equipment technical specifications. In order to ensure that at least three mainstream domestic manufacturers, such as Chaoxing, Xiwo and Wenxiang, can meet the parameter requirements.

Suggestion: Remove these two requirements.

(2) Technical Requirements for:

6. The capture card must pass the test of the National Radio and Television Administration (a copy of the test report issued by the National Radio and Television Administration is required);

Question: For above listed requirements, because the acquisition card is a civil consumer-grade product and can be purchased by mainstream consumer platforms, the requirement to provide test reports is exclusive and tendentious, which violates the principle that a certain product should not be exclusively specified in the establishment of bidding documents, in order to ensure that there are at least more than three mainstream domestic manufacturers such as Chaoxing, Xiwo, Wenxiang can meet the parameter requirements.

Suggestion: Delete this parameter.

(3) Technical Requirements for:

7. Support  $\geq 2$  Mini-DP movie screen output interfaces, including outputting live feed to large screen, non-linear devices, etc., without delay, non-network interface; resolution  $\geq 1920 \times 1080$ ; support the output of the local studio image and the final image of the recording to the large screen in the viewing room;



Question: In the technical requirements of the 7th bidding listed above, the HDMI interface can already achieve 4K resolution video transmission. The DP interface is generally used for professional film and television shooting and transmission, and can support up to 8K resolution video transmission. But as DP interface is performance overflow in contrast with widely used 4K at present , such requirement can restrict or exclude potential manufacturers, so at least three mainstream domestic manufacturers, such as Chaoxing, Xiwo and Wenxiang, should be ensured to meet this parameter requirement.

Suggestion: Delete this parameter.

(4) Technical Requirements for:

11. The playback host should comply with the requirements of the National Electronic Computer Quality Supervision and Testing Center, with a mean time between failures (MTBF)  $\geq 25,000$  hours (a copy of the test certificate should be provided).

II. Parameters of recording system

7. Support multi-channel signal recording, 1920 x 1080 MPEG2-I 100M high-quality format recording  $\geq 5$  channels of input images; support 1920 x 1080 MPEG2\_IBP 25M  $\geq 5$  channels of resource channels and  $\geq 1$  channel of final output (live feed) of H.264/H.265 High Profile 2M MP4; (software screenshot affixed with the official seal of the manufacturer shall be provided)

17. Support the recording of the mouse movement track of the leacture, so that the classroom scene is perfectly restored. Support uncompressed high-bit rate iVGA recording, through the acquisition software installed on the teacher's computer, the video signal of the teacher's computer can be transmitted to the recording host;

Question: The above listed item 17 of “II. Parameters of recording system” , due to the product upgrade, traditional iVGA recording and broadcasting system has been phased out gradually.

It’ s suggested to amend to: 17. Support the recording of the mouse movement track of the leacture, so that the classroom scene is perfectly restored. Support uncompressed



high-bit rate iVGA or HDMI recording, through the acquisition software installed on the teacher's computer, the video signal of the teacher's computer can be transmitted to the recording host;

(5) Technical Requirements for:

19. The playback system shall be accompanied with the copy of the playback system software copyright certificate and the copy of the software registration test report issued by the National Copyright Administration.

III. Track service software functional requirements (meet but not limited to)

3. Support area shielding to avoid interference with recording lessons and improve system recognition effect (functional screenshots of software interface configuration should be provided);

10. The system can automatically adapt to the teacher's height, so that the course picture is stable, without manual adjustment (copy of the copyright certificate of the height-adaptive software shall be provided);

11. A copy of the tracking system software copyright certificate and the copy of the software product test report issued by the National Copyright Administration shall be provided.

Question: Above listed technical requirements for bidding, it is required to provide function screenshots, photocopies of software copyright certificates, test reports and official seals. Our company believes that for similar product manufacturers, the standards used by each manufacturer are different, and the details of function description are inconsistent, and the technical evaluation standard of this project has requirements on the number of items that are not satisfied with the general terms of product technical specifications, which may limit or exclude potential bidders from reasonably selecting the best cost-effective manufacturer. In order to ensure that at least three mainstream domestic manufacturers such as Chaoxing, Xiwo and Wenxiang can meet the parameter requirements.

It' s suggested to delete the requirements of providing screenshots, software copyright certificates, test reports, instead, only make requirements for performance.



**回复：**招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

**Question 24/问题 24**

招标设备序号：171，名称：纳米黑板

（1）招标技术要求：

- 3.产品整体尺寸：宽度 $\geq 4000\text{mm}$ ，高度 $\geq 1200\text{mm}$ ，厚度 $\leq 90\text{mm}$ ；
- 4.显示尺寸 $\geq 86$ 英寸，显示尺寸 $\geq 1898.24\text{mm} \times 1069.17\text{mm}$ ，单屏物理分辨率 $\geq 3840 \times 2160$ ；
- 7.产品具备手势滑动方式选择、遥控器选择、物理按键选择三种切换不同信号源的方式，方便、高效；

问题：针对上述要求，由于电子黑板属于民用消费级产品，近年来随着产品升级，作为国内主流纳米黑板生产厂商例如：欧帝、希沃、鸿合等品牌对原有技术进行了多次升级，升级后的产品均未能完全满足招标参数的要求。

建议：删除上述招标参数。或修改为：4.显示尺寸 $\geq 86$ 英寸；

（2）招标技术要求：

三、内置快拍仪参数要求

- 1.像素 $\geq 500$ 万；帧数：720P和1080P不低于25帧/秒；拍摄幅面：A4幅面，图像色彩RGB24位真彩，拍摄速度 $\leq 1$ 秒 图片格式JPG/BMP/PNG/GIF/TIF，文档格式PDF/DOC/TXT/RTF/XLS，视频格式FLV/MP4；
- 2.为方便教室内部使用，采用无线方式连接，无线传输频率 $\geq 150\text{M/S}$ ；
- 3.镜头支持270度翻转式。可拍摄试卷、实物等；拍摄课堂活动，拍摄讲台上的老师，方便微课录制；
- 4.具备对比教学和实物展示功能，具备2、4画面同屏展示进行对比教学；
- 5.具备一键OCR文字识别，能同时将中、英文和表格识别成doc/xls/txt/pdf/rtf等文档格式；



6.具备电子白板讲解注释，具备拍照、录像、存储等功能，具备对实物展示画面任意角度旋转纠偏；

7.具备微课云平台功能，支持微课上传、下载和在线观看；

8.具备多个图片一键装订成册，支持一键转换成 PDF 文件；

9.嵌入式设计结构，与智慧教室互动黑板为一整体，防盗式设计，支持内置充电模块功能。

问题：随着科技进步，快拍仪性能也在逐步提高，内置快拍仪技术落后也已经逐渐被淘汰，多为外置高性能快拍仪。建议删除内置快拍仪参数要求，以保证至少有欧帝、希沃、鸿合三个以上的主流国内厂商能够满足该参数要求。

建议：删除内置快拍仪的相关要求。

或修改为：三、配置高性能快拍仪

1.像素 $\geq 500$ 万； 帧数：720P 和 1080P 不低于 25 帧/秒；拍摄幅面：A4 幅面，图像色彩 RGB24 位真彩，拍摄速度 $\leq 1$ 秒 图片格式 JPG/BMP/PNG/GIF/TIF，文档格式 PDF/DOC/TXT/RTF/XLS，视频格式 FLV/MP4；

S.N.: 171, Name: Nano blackboard

(1) Technical Requirements for:

3. Overall size of the product: Width  $\geq 4000$ mm, height  $\geq 1200$ mm, thickness  $\leq 90$ mm;

4. Display size  $\geq 86$ ", display size  $\geq 1898.24$ mm x 1069.17mm, single screen physical resolution  $\geq 3840$  x 2160;

7. The product has three ways to switch between different signal sources: gesture sliding mode, remote control, and physical button, which is convenient and easy;

Question: In response to the above requirements, as electronic blackboard is a civilian consumer-grade product, in recent years, with the product upgrading, as the domestic mainstream nano blackboard manufacturers such as Oudi, Xivo, Honghe and other brands have upgraded the original technology for many times, and the upgraded products have not fully met the requirements of the bidding parameters.

Suggestion: Delete above bidding parameter, or amend to: 4. Display size  $\geq 86$  inches



(2) Technical Requirements for:

III. Parameter requirements of built-in snapshot device

1. Pixel  $\geq 5$ MP; frames: 720P and 1080P not less than 25 frames/s; shooting format: A4 format, image color RGB24-bit true color, shooting speed  $\leq 1$  s Picture format JPG/BMP/PNG/GIF/TIF, document format PDF/DOC/TXT/RTF/XLS, video format FLV/MP4;
2. For use inside classroom, the wireless connection is adopted, and the wireless transmission frequency is  $\geq 150$ M/S
3. The lens supports 270 degree flip. Shoot test papers and other objects; shoot classroom activities, and teachers on the podium, which is convenient for micro-class recording;
4. It provides comparison teaching and physical display, and has 2 and 4 pictures on the same screen for comparison;
5. With one-key OCR text recognition, it simultaneously recognizes Chinese, English and tables into document formats such as doc/xls/txt/pdf/rtf;
6. Equipped with electronic whiteboard to explain and annotate, capable of taking pictures, video recording, storage, and capable of rotating and correcting the actual display screen at any angle;
7. It supports micro-course cloud platform, which supports micro-course uploading, downloading and online viewing;
8. The multiple pictures can be bound into a book with one click, and supports conversion into PDF files;
9. Embedded design structure, integrated with smart classroom interactive blackboard, anti-theft, support built-in charging module function.

Question: With the progress of science and technology, the performance of the snapshot instrument is also improving gradually. The technology of the built-in snapshot instrument is backward and has been gradually eliminated. Nowadays, most of them are external high-performance snapshot instruments. It is recommended to delete the parameter requirements of the built-in snapshot instrument to ensure that at



least three mainstream domestic manufacturers, including Oudi, Xiwo and Honghe, can meet the parameter requirements.

Suggestion: Delete the requirement for built-in snapshot instrument.

Or amend to: III. Configured with high performance snapshot instrument

1. Pixel  $\geq$  5MP; frames: 720P and 1080P not less than 25 frames/s; shooting format: A4 format, image color RGB24-bit true color, shooting speed  $\leq$  1 s Picture format JPG/BMP/PNG/GIF/TIF, document format PDF/DOC/TXT/RTF/XLS, video format FLV/MP4;

**回复：**招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

### Question 25/问题 25

招标设备序号：172，名称：互联黑板

（1）招标技术要求：

- 5.支持 HDMI、VGA、TV、window、Android 等五种信号源模式下支持全屏开关、窗口一键下移功能；
- 9.授权开机：支持 U 盘加密狗功能，教师可通过 U 盘授权使用；
- 10.接口要求：具备 HDMI $\geq$ 3；VGA $\geq$ 1；Touch $\geq$ 1；USB $\geq$ 7；RS232 $\geq$ 1；Audio Out $\geq$ 1；RJ45 $\geq$ 1 等接口，整机具备 $\geq$ 3 路前置 USB 接口（其中 $\geq$ 1 路 USB3.0， $\geq$ 2 路 USB2.0）；
- 12.具有触摸功能与粉笔书写功能的教学触摸互动、水笔与粉笔书写功能；支持水笔、普通粉笔、无尘粉笔等多种书写方式
- 14.积木式拼接：为确保整机美观性，安装维护方便，两侧与中间互动屏之间需采用积木式拼接；具备智能亮度调节功能，可通过触控菜单快捷设置白天、夜晚两种亮度模式；具备文件自动分类功能，在嵌入式系统下，支持外接存储设备内容的自动分类；
- 20.具备将板书内容实时同步到液晶显示模块的功能；



21.自动识别：右侧黑板具备自动识别粉笔、手指、白板笔等书写功能，可识别板擦擦除功能；

23.课后储存：具体课后自动保存课程资料的功能；

25.快捷键功能：右侧黑板内置快捷键：清除，保存，切换显示白板内容或电脑课件内容，PPT 播放功能等，可改变板书颜色（多色可选），翻页等功能；

问题：针对上述要求，由于电子黑板属于民用消费级产品，近年来随着产品升级，作为国内主流纳米黑板生产厂商例如：欧帝、希沃、鸿合等品牌对原有技术进行了多次升级，升级后的产品均未能完全满足招标参数的要求。例如：VGA 接口已经逐渐被弃用、U 盘加密狗也因容易丢失会导致无法开机、积木式拼接也因容易毁坏而不被使用、快捷键等物理按键功能也在逐渐被软件工具条所替代。建议删除内置快拍仪参数要求，以保证至少有欧帝、希沃、鸿合三个以上的主流国内厂商能够满足该参数要求。

建议：删除上述招标参数。

(2) 招标技术要求：

15.电磁兼容性能：需通过射频感应的传导骚扰抗扰度试验，射频电磁场辐射抗扰度试验，电压暂降、短时中断和电压变化等试验检测，并提供测试报告；

问题：电磁兼容性能参数为通用参数，3C 产品出厂前均会满足相应的国家标准。我认为要求投标人提供国家检测机构出具的检测报告，会让招标产品有一定的倾向性，并存在增加投标人的投标成本可能，为保证至少有欧帝、希沃、鸿合三个以上的主流国内厂商能够满足该参数要求。

建议：删除上述招标参数。

S.N.: 172, Name: Interconnected blackboard

(1) Technical Requirements for:

5. Support HDMI, VGA, TV, window, Android, support full-screen switch, with one-key window move-down;

9. Authorized boot: Support flash drive dongle for teachers to authorize;

10. Interface requirements: Interfaces include HDMI $\geq$ 3; VGA $\geq$ 1; Touch $\geq$ 1; USB $\geq$ 7; RS232 $\geq$ 1; Audio Out $\geq$ 1;



12. Teaching touch interaction, water pen and chalk writing function with touch function and chalk writing function; support water pen, ordinary chalk, and dust-free chalk;

14. Building block splicing: For the beautiful appearance of the whole machine and easy installation and maintenance, building block splicing is required between the two sides and the middle interactive screen; with intelligent brightness adjustment function, there are day and night modes, which can be selected in touch menu; it supports automatic file classification, and under the embedded system, it supports automatic classification of the content of external storage devices;

20. It has the function of synchronizing the content of the writing on the blackboard to the LCD module in real time;

21. Automatic identification: The blackboard on the right recognizes writing with chalk, fingers, and whiteboard

23. Save course: Automatically saving course materials after class;

25. Shortcut key: The built-in shortcut keys on the right blackboard: Clear, save, switch and display whiteboard content or computer courseware content, PPT playback, as well as change the color of blackboard writing (multi-color optional), turn pages, etc.

Question: In response to the above requirements, as electronic blackboard is a civilian consumer-grade product, in recent years, with the product upgrading, as the domestic mainstream nano blackboard manufacturers such as Oudi, Xiwo, Honghe and other brands have upgraded the original technology for many times, the upgraded products have not fully met the requirements of the bidding parameters. For example, the VGA interface has been gradually abandoned, the USB dongle can not be turned on because it is easy to lose, the building block splicing can not be used because it is easy to destroy, and the physical key functions such as shortcut keys are also gradually replaced by software toolbars. It is recommended to delete the parameter requirements of the built-in snapshot instrument to ensure that at least three mainstream domestic



manufacturers, including Oudi, Xiwo and Honghe, can meet the parameter requirements.

Suggestion: Delete above bidding parameters.

(2) Technical Requirements for:

15. Electromagnetic compatibility performance: It shall pass the radio frequency induction conducted disturbance immunity test, radio frequency electromagnetic field radiation immunity test, voltage sag, short-term interruption and voltage change test, and provided with test report;

Problem: EMC performance parameters are general parameters, and 3C products will meet corresponding national standards before leaving the factory. Our company believes that requiring the bidder to provide the test report issued by the national testing agency will make the bidding products have a certain tendency and may increase the bidding cost of the bidder. In order to ensure that at least three mainstream domestic manufacturers, such as Oudi, Xiwo and Hongh, can meet the parameter requirements.

Suggestion: Delete above bidding parameters.

**回复:** 招标文件有修改, 详见补遗(十二)。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

### **Question 26/问题 26**

招标设备序号: 189, 名称: 智慧教室终端一体机

(1) 招标技术要求:

\*1.内置精品录播系统, 具备 $\geq 5$ 路 SDI 输入接口、 $\geq 4$ 路 RJ-45 网络接口、 $\geq 1$ 路 HDMI 输入接口、 $\geq 2$ 个 HDMI 输出接口; 具备 $\geq 6$ 路 Mic 音频输入接口(提供相关产品图片加盖厂家公章);



问题：随着科技的进步，传统的数据接口已经被逐步替代，而且不同生产厂商在数据接口设计上也不尽相同。为保证招标的公平公正，让更多的品牌能够参与，为保证至少有超星、希沃、文香三个以上的主流国内厂商能够满足该参数要求。

建议：删除该项招标技术要求。

(2) 招标技术要求：

3.内置数字音频处理模块，具备自适应背景降噪(ANS)、自动增益控制(AGC)，实现高清晰、高还原；内置回声消除(AEC)功能，互动过程中自动消除远端回声；支持网络远程调试（提供相关功能截图加盖厂家公章）。

问题：列举的上述招标技术要求中，要求提供功能截图并加盖公章。我认为就同类产品厂商而言，产品的技术特点以及宣传侧重点并不一样，在功能界面设计方面无法完全达到完全一致，要求提供功能截图，存在限制或排斥潜在投标人合理选择最优性价比制造商的可能，为保证至少有超星、希沃、文香三个以上的主流国内厂商能够满足该参数要求。

建议：删除提供截图的要求，主要对性能做出要求即可。

S.N.: 189, Name: Smart classroom terminal all-in-one machine

(1) Technical Requirements for:

\*1. Built-in high-quality playback system, with  $\geq 5$  SDI input interfaces,  $\geq 4$  RJ-45 network interfaces,  $\geq 1$  HDMI input interface,  $\geq 2$  HDMI output interfaces; with  $\geq 6$  Mic audio input interfaces (product pictures affixed with the official seal of the manufacturer shall be provided);

Question: With the progress of science and technology, the traditional data interface has been gradually replaced, and different manufacturers have different data interface designs. In order to ensure the fairness and justice of the bidding and allow more brands to participate, at least three mainstream domestic manufacturers such as Chaoxing, Xiwo and Wenxiang should be ensured to meet the parameter requirements.

Suggestion: Delete this technical requirement.

(2) Technical Requirements for:



3. Built-in digital audio processing module, with adaptive background noise reduction (ANS), automatic gain control (AGC), for high-definition, high-reduction; built-in echo cancellation (AEC) function, automatically eliminate far-end echoes during interaction; support remote debugging (function screenshots affixed with the official seal of the manufacturer shall be provided).

Question: Among the listed technical requirements for bidding, it is required to provide functional screenshots and affix official seals. Our company believes that for manufacturers of similar products, the technical characteristics and publicity focus of the products are different, and the functional interface design cannot be completely consistent. Required to provide functional screenshots may restrict or exclude potential bidders from reasonably selecting the best cost-effective manufacturer, so at least three mainstream domestic manufacturers, such as Chaoxing, Xiwo and Wenxiang, should be ensured to meet the parameter requirements.

Suggestion: Delete the requirement for providing screenshots, instead to make requirement for performance only.

**回复：**招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

**Question 27/问题 27**

招标设备序号：199，名称：智慧课堂系统软件

招标技术要求：

\*21.各原厂商需提供教学系统软件著作权登记证书。

问题：列举的上述招标技术要求中，要求提供相关著作权或软件著作权证书复印件。我认为软件著作权登记证书通常用于生产厂商定期公告宣传自己的产品，并保护自身产品免受著作权方面的纷扰。在招标过程中使用存在限制或排斥潜在投标人合理选择最优性价比制造商的可能，为保证至少有超星、希沃、文香三个以上的主流国内厂商能够满足该参数要求。



建议：删除提供软件著作权证书的要求，主要对性能做出要求即可。

S.N.:199, Name: Smart classroom system software

Technical Requirements for:

\*21. Every original manufacturer needs to provide the teaching system software copyright registration certificate.

\*21.各原厂商需提供教学系统软件著作权登记证书。

Question: In the listed technical requirements for bidding, it is required to provide copies of relevant copyright or software copyright certificates. Our company believes that the software copyright registration certificate is usually used by manufacturers to regularly publicize their products and protect their products from copyright disputes. By required to provide above certificates, there is a possibility of restricting or excluding potential bidders to reasonably select the best cost-effective manufacturers. In order to ensure that at least three mainstream domestic manufacturers, namely Chaoxing, Xiwo and Wenxiang, can meet the requirements of this parameter.

It's suggested to delete the requirement of providing the software copyright certificate, and make requirements for performance only.

回复：招标文件有修改，详见补遗（十二）。

**Reply:** There are changes to the bidding documents, please refer to **Amendment (XII)** for the details.

### **Question 28/问题 28**

招标设备序号：202，名称：广播级室内云台

（1）招标技术要求：

2.超静音设计，全速运转噪声：不高于 17dB（提供相关检测报告）；

问题：（1）列举的上述招标技术要求中，要求提供相关检测报告，我认为要求投标人提供国家检测机构出具的检测报告，会让招标产品有一定的倾向性，并存在增加投标人的投标成本可能，为保证至少有思锐、大疆、百诺三个以上的主



流国内厂商能够满足该参数要求。

建议：删除提供相关检测报告的证明要求。

(2) 招标技术要求：

7.为了证明是原厂支持和满足摄像机控制功能需要，必须提供产品原厂质保函、原厂售后服务承诺函、CE 报告、ROHS 报告。

问题：CE 报告、ROHS 报告常用于出口至欧洲国家所使用，并不适用于国内产品采购。增加该两项报告要求会让招标产品有一定的倾向性，并存在增加投标人的投标成本可能，为保证至少有思锐、大疆、百诺三个以上的主流国内厂商能够满足该参数要求。

建议：删除该两项标准参数。

(3) 招标技术要求：

问题：在设备序号 163 至 165 项招标技术要求中，要求提供“质保和售后服务：提供原厂针对该项目的授权书及售后服务承诺书，软硬售后服务 $\geq 4$  年。”由于该项目为以色列政府贷款，部分产品由以色列厂商直接供应，为了更好的提供本地化服务，使项目顺利进行，建议项目授权书由原厂提供，售后服务可由原厂或国内授权代理商提供。

建议修改为：质保和售后服务：提供原厂针对该项目的授权书及制造商或授权经销商针对本项目的售后服务承诺书原件，软硬售后服务 $\geq 4$  年。

S.N.:202, Name: Broadcast level indoor PTZ

(1) Technical Requirements for:

2.Ultra-quiet, noise at full-speed: Not higher than 17dB (test report shall be provided);

Question: (1) In the above technical requirements for bidding, relevant test reports are required. Our company believes that requiring the bidder to provide the test report issued by the national testing agency can make a certain tendency and may increase the bidding cost of the bidder. In order to ensure that at least three mainstream domestic manufacturers such as Cirui, Dajiang and Bainuo can meet the parameter requirements. It's suggested to delete the requirement of providing relevant test report.



(2) Technical Requirements for:

7. In order to prove that the original factory supports and meets the needs of the camera control function, the original product warranty letter, the original factory after-sales service commitment letter, the CE report, and the ROHS report must be provided.

Question: CE report and ROHS report are often used for export to European countries, but not for domestic product procurement. The addition of these two reporting requirements will make the bidding products have a certain tendency and may increase the bidding cost of the bidders. In order to ensure that at least three mainstream domestic manufacturers, Sirui, Dajiang and Bainuo, can meet the parameter requirements.

Suggestion: Delete these two parameters.

(3) Technical Requirements for:

26. Question: In the bidding technical requirements of equipment No. 163 to 165, it is required to provide "warranty and after-sales service: provide the original manufacturer's letter of authorization and after-sales service commitment for the project, and the soft and hard after-sales service  $\geq$  4 years." Because the project is financed by the Israeli government, some products are directly supplied by Israeli manufacturers. In order to better provide localization services and make the project going smoothly, it is recommended that the project authorization be provided by the original manufacturer, after-sales service can be provided by the original factory or domestic authorized agent.

It is suggested to amend to: warranty and after-sales service: provide the original manufacturer's letter of authorization for the project and the original manufacturer's or authorized dealer's letter of commitment for after-sales service for the project, after-sales service for software and hardware:  $\geq$  4 years.



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**回复：**招标文件未作修改,按招标文件执行。

**Reply:** The bidding documents have not been modified. Please proceed with the execution according to the bidding documents.



## 补遗（十二）

### Amendment (XII)

**项目名称：**滇西科技师范学院利用以色列政府贷款购置应用型教育实验实训设备建设项目（第一包：教务处、智能与信息工程学院、管理与经济学院设备采购）（重新招标）

**Project Name:** West Yunnan University Construction Project of Application-Oriented Educational Experimental Training Equipment Procurement Utilizing Israeli Government Loan (Package 01: Procurement of Equipment for the Academic Affairs Office, Faculty of Intelligent and Information Engineering, Faculty of Management and Economics) (Re-Bidding)

**招标编号 Bid No.:** 0733-225122263676/01（重新招标）/ (Re-Bidding)

各潜在投标人：

All potential bidders,

现将上述项目招标文件做如下修改：

With reference to the bidding document of the captioned project, the changes are made as follow:

#### 一、招标文件（第二册）第六章 投标资料表

##### 1.

原规定：

**Original :**

\*12.1 & 12.2 所有价格应当使用美元报价。

\*12.1 & 12.2 All quoted price shall be in USD.

现修改为：

**Modified as:**

\*12.1 & 12.2 所有价格应当使用美元和欧元报价，同时保证两币种的价格换算后



为同一价格。

\*12.1 & 12.2 All quoted price shall be in **USD** and **EURO**, while ensuring that the prices in both currencies are converted into the same price.

2.

原规定：

**Original :**

\*15.3 投标保证金应用美元或人民币，并采用下列任何一种形式：

1) **银行保函：**投标保证金应用美元表示，保函受益人应为中信国际招标有限公司，由一家在中华人民共和国境内或境外信誉良好，分行或以上的银行按照本招标文件第四章格式 IV-7（投标保证金银行保函格式）格式出具，保函有效期为自开标之日起 180 天。

银行保函的格式应为英文，并完全遵照招标文件规定的格式及上述其它要求，否则该投标将被视为非实质性响应，并予以否决。

The bid security shall be denominated in USD or in RMB, and shall be in one of the following forms:

1) **Bank guarantee:** In the case, the bid security shall be in USD. The bank guarantee shall be issued by a reputable bank at branch level or above located in PRC or abroad, in the form provided in Form IV-7 Bank Guarantee Form for Bid Security, Section 4 of the Bidding Documents and in favor of CITIC International Tendering Co., Ltd.. The bank guarantee shall be valid for 180 days starting from the date of bid opening.

The bank guarantee shall be in English, and be completely in accordance with the form stipulated in the Bidding Documents and other requirements mentioned above.

Otherwise, the bid will be rejected as substantially non-responsive; or

现修改为：

**Modified as:**

\*15.3 投标保证金应用美元或人民币，并采用下列任何一种形式：



1) **银行保函:** 投标保证金应用美元表示, 保函受益人应为中信国际招标有限公司, 由一家在中华人民共和国境内或境外信誉良好, 分行或以上的银行按照本招标文件提供的投标保证金银行保函格式出具, 保函有效期为自开标之日起 270 天。银行保函的格式应为英文, 并完全遵照招标文件规定的格式及上述其它要求, 否则该投标将被视为非实质性响应, 并予以否决。

The bid security shall be denominated in USD or in RMB, and shall be in one of the following forms:

1) **Bank guarantee:** In the case, the bid security shall be in USD. The bank guarantee shall be issued by a reputable bank at branch level or above located in PRC or abroad, in the form provided in the Bidding Documents for Bid Security, and in favor of CITIC International Tendering Co., Ltd. The bank guarantee shall be valid for 270 days starting from the date of bid opening.

The bank guarantee shall be in English, and be completely in accordance with the form stipulated in the Bidding Documents and other requirements mentioned above. Otherwise, the bid will be rejected as substantially non-responsive; or

### 3.

原规定:

**Original :**

15.6&15.7 在招标人与中标人签订书面合同后, 招标人将向未中标的投标人退还投标保证金。在招标人与中标人签订的书面合同生效后 5 日内, 招标人将向中标人退还投标保证金。

15.6&15.7 Unsuccessful bidders' bid security will be returned in its original amount by the Tenderee after signing of the written contract between the Tenderee and the successful bidder; successful bidder's bid security will be returned in its original amount by the Tenderee within five (5) days after signing and effectiveness of the written contract between the Tenderee and the successful bidder.



现修改为:

**Modified as:**

15.6&15.7 在招标人与中标人签订书面合同后，招标人将向未中标的投标人退还投标保证金。在招标人与中标人签订的书面合同生效，且中标人递交履约保证金后 5 日内，招标人将向中标人退还投标保证金。

15.6&15.7 Unsuccessful bidders' bid security will be returned in its original amount by the Tenderee after signing of the written contract between the Tenderee and the successful bidder; successful bidder's bid security will be returned in its original amount by the Tenderee within five (5) days after signing and effectiveness of the written contract between the Tenderee and the successful bidder, and the winning bidder submits the performance security.

4.

新增:

**Add**

15.8 下列任一情况发生时，投标保证金将不予退还:

5) 中标人将签订的书面合同递交至以色列贷款机构后，因合同中所提供货物及相关服务的以色列成分不足导致合同无法生效;

15.8 When any of the following circumstances occurs, the bid security will not be refunded:

5) After the winning bidder submits the signed written contract to the Israeli loan institution, the contract cannot be effective due to insufficient Israeli content of the goods and related services provided in the contract;

5.

原规定:

**Original :**

\*16.1 开标日期: 2023 年 10 月 11 日上午 10: 00 (北京时间)

投标有效期: 开标日后 180 天

Date of Bid Opening: 10:00 am (Beijing Time), October 11<sup>th</sup>, 2023.



Period of Validity of bids: 180 days after the date of bid opening

现修改为:

**Modified as:**

\*16.1 开标日期: 2023 年 10 月 11 日上午 10: 00 (北京时间)

投标有效期: 开标日后 270 天

Date of Bid Opening: 10:00 am (Beijing Time), October 11<sup>th</sup>, 2023.

Period of Validity of bids: 270 days after the date of bid opening

## 6.

原规定:

**Original :**

24.5 2) 单项设备下, 投标文件不满足招标文件技术规范一般性条款的内容累计超过 5 项 (含 5 项); 投标文件不满足招标文件所有设备技术规范一般性条款的内容累计超过 30 项 (含 30 项)。

24.5 2) Under the single equipment item, the number of deviation items of the bid from the main specifications without the mark of asterisk (\*) in the Technical Specifications of the Bidding Documents amount to or exceed 5 items (5 items inclusive). The Number of deviation items of the bid from the main specifications without the mark of asterisk (\*) in the Technical Specifications of all the equipment of the Bidding Documents amount to or exceed 30 items (30 items inclusive).

现修改为:

**Modified as:**

24.5 2) 单项设备下, 投标文件不满足招标文件技术规范一般性条款的内容累计超过 5 项 (含 5 项); 投标文件不满足招标文件所有设备技术规范一般性条款的内容累计超过投标文件技术规格条款总数的 3% (含 3%)。

24.5 2) Under the single equipment item, the number of deviation items of the bid from the main specifications without the mark of asterisk (\*) in the Technical Specifications of the Bidding Documents amount to or exceed 5 items (5 items inclusive). The Number of deviation items of the bid from the main specifications without the mark of



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asterisk (\*) in the Technical Specifications of all the equipment of the Bidding Documents amount to or exceed 3% of the total number of technical specifications (3% inclusive).



7.投标保证金银行保函应以此版本为准

投标保证金银行保函（样本）

开具日期：\_\_\_\_\_

致：(招标人/招标机构)

本保函作为(投标人名称)(以下简称“投标人”)对(招标机构)(招标编号)的  
投标邀请提供(货物名称)的投标保函。

(出具保函银行名称)无条件地、不可撤销地具结保证本行、其继承人和受让人，一旦收到贵方提出的就下述任何一种事实的书面通知，立即无追索地向贵方支付金额为(金额数和币种)保证金：

- 1.在提交投标文件的截止之日起到投标有效期满前，投标人撤回投标；
- 2.在收到中标通知后 30 日内，投标人未能与买方签订合同；
- 3.在收到中标通知后 30 日内，投标人未能按招标文件规定提交履约保证金；
- 4.在收到中标通知后，投标人未按招标文件规定在合同生效后 15 日内缴纳招标服务费。
- 5.中标人将签订的书面合同递交至以色列贷款机构后，因合同中所提供货物及相关服务的以色列成分不足导致合同无法生效；

本保函自提交投标文件的截止之日起(保函有效期日数，应在招标人与中标人签订的书面合同生效且中标人递交履约保证金后 5 日内保持有效)日历日内有效，并在贵方和投标人同意延长的有效期内保持有效。延长的有效期只需通知本行即可。贵方有权提前终止或解除本保函。

出具保函银行名称:\_\_\_\_\_

签字人姓名和职务:\_\_\_\_\_

签字人签名:\_\_\_\_\_

公 章:\_\_\_\_\_



**7. Bid Security should be based on this version:**

**Bid Security**

Issuing Date:

To: (Name of Tendering Agent)

This Guarantee is hereby issued to serve as a Bid Security of (name of Bidder) (hereinafter call as the "bidder") for Invitation for Bid IFB No. \_\_\_\_\_ for supply of (name of Goods) to (name of Tendering Agent).

(name of issuing bank) hereby unconditionally and irrevocably guarantees and binds itself, its successors and assigns to pay you immediately without recourse, the sum of (currency and figure in words) upon receipt of your written notification stating any of the following:

- 1). The Bidder has withdrawn his bid after the time and date of the deadline for submission of bids and before the expiration of its validity period; or
- 2). The Bidder has failed to enter into Contract with you within thirty (30) calendar days after the receipt of Notification of Award; or
- 3). The Bidder has failed to establish acceptable Performance Security within thirty (30) calendar days after receipt of the Notification of Award;
- 4) The Bidder has failed to pay the service charge for bidding within fifteen (15) days after effectiveness of contract in accordance with the stipulation in the bidding document, after receipt of the Notification of Award.
- 5) After the winning bidder submits the signed written contract to the Israeli loan institution, the contract cannot be effective due to insufficient Israeli content of the goods and related services provided in the contract;

It is fully understood that this guarantee takes effect from the time and date of the deadline for submission of bids and shall remain valid for a period of (The validity period of the performance bond should attend on the effective date of the written contract between the bidder and the winning bidder, and it should remain valid for 5 days after the winning bidder has submitted the performance bond) \_\_\_\_\_ calendar days thereafter, and during the period of any extension thereof that may be agreed upon



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between you and the Bidder with notice to us, unless sooner terminated and or released by you.

Issuing Bank: \_\_\_\_\_

Signed by: \_\_\_\_\_

*(Printed name and designation of officials authorized to sign on behalf of issuing bank)*

Signature: \_\_\_\_\_

### 三、招标文件（第二册）第八章 货物需求一览表及技术要求-第四章 设备技术要求

Bidding Documents (Volume II) Chapter VIII. Schedule of Requirements and Technical Specifications and CHAPTER IV TECHNICAL REQUIREMENTS FOR THE EQUIPMENT

序号：1：交互式数字临摹台

**S.N.:1: Interactive digital copying machine**

原规定：

**Original :**

- 1.一体化设计，无需外接任何辅助主机系统，基于 iOS 或者 Android 系统，方便后续远程升级；高清临摹：支持学生用宣纸、毛笔传统的方式进行高清临摹（能清楚临摹长宽均不大于 1 厘米的电子字帖）；
- 2.临摹台支持网络供电功能，只需要在临摹台的网络接口插入一根网线，即可实现临摹台的供电和网络接入的功能；
- 3.支持八点触控功能，用手指直接操控系统；支持分屏触控功能，支持临摹台左边一半能触控，即左边可以播放例字视频，并可以根据学习进度和需求暂停或者快进以及音量大小调节；右边一半不能触控功能，右边排版好当前播放的例字字帖，可以实现摹帖和临帖；支持手指双击碑帖自动放大缩小功能；
- 4.高可视角度：80°/80°/80°/80°（上下左右）；



- 5.支持通过互动终端拍摄作品并自动上传到教师端;
- 6.摹帖屏可承重不低于 60kg 无裂痕;
- 7.防水: 临摹屏支持防水功能;
- 8.耐磨: 临摹区面板可抗击不少于 100000 次自然摩擦无划痕;
- 9.护眼功能: 发光柔和护眼, 亮度不高于 260cd/m<sup>2</sup>;
- 10.支持 RJ45 接口, 100M 自适应;
- 11.支持 WiFi 接口, 802.11b/g/n; 12.支持麦克语音录制功能;
- 12.摹帖屏显示尺寸:  $\geq 45\text{cm} \times 25\text{cm}$ ; 分辨率:  $\geq 1920 \times 1080$ ;
- 13.摹帖屏具备自动感光功能, 可根据环境光的明暗自动调节屏幕亮度, 环境光变亮时, 屏幕亮度自动增高, 环境光变暗时, 屏幕亮度自动降低;
- 14.内置音箱;
- 15.为增加学生使用的便利性和安全性, 临摹台外置分体式接口: 耳机插孔、USB 接口、麦克接口、电源开关, 并将分体式接口嵌入在临摹桌桌面前侧(学生座位一侧);
- 16.支持自主学习模式下的碑帖临摹功能;
- 17.支持触控点签功能;
- 18.支持学生端软件自动在云平台上更新的功能;
- 19.支持软件方式调节音量和亮度的功能;
- 20.支持一键系统整体升级功能; 支持一键自动更新碑帖功能;
- 21.直接触控操作不少于 10 套软件系统: 练习系统、视频资源库系统、碑帖系统、课程系统、书法知识库系统、复习系统、名家介绍、集创系统、题库系统、名家课堂系统等功能;
- 22.同一临摹台支持任意账号登陆; 系统自动记录每个账号的学习进程;
- 23.碑帖系统: 支持碑帖手指八点触控放大缩小功能, 支持临帖电子毛毡功能, 电子毛毡能触控放大缩小, 位置随意摆放, 支持碑帖通过年代、字体、作者搜索选择等功能;
- 24.练习系统: 支持字体排版功能, 支持书体、作者、字形、笔类、笔画、偏旁、结构排版字体, 支持字格数量的设置功能, 支持米字格、田字格、九宫格、田回格、大方格多种背景随意变化, 支持一键清空等功能;



- 25.视频资源库系统：内含包括但不限于欧颜柳赵四种字体书法家视频教学课程，含笔画、偏旁、例字；
- 26.课程系统：内含不少于 500 课时课程，内含包括但不限于欧颜柳赵四种字体的课程各不少于 100 课时；
- 27.书法知识库：内含包含但不限于书法基础知识、临摹与创作、中国书法简史、古代书法理论、篆刻、硬笔书法常识 6 大板块知识库；共计不低于 5000 个知识条目；具有通过关键字进行知识的全文搜索功能；
- 28.复习系统：自动记录以往练习数据，方便学生直接根据练习的历史记录进行复习；
- 29.集创系统：支持折扇、团扇、条幅、横幅、斗方、对联、中堂等模式集字创作功能；
- 30.名家课堂系统：必须是带出版方标识，具备自主知识产权的专家视频课程；
- 31.课程软件支持拼字游戏功能，支持学生用手指在临摹台进行单钩和双钩的书写；
- 32.题库考试系统：支持学生自主登录题库软件，支持任意选择书体类、书家类、书法史类等题目类型答题，支持一键全选功能，支持答题卡选项功能，支持查看每一题的答案详解功能，支持每一题直接切换功能，支持自动评价功能：答题的题目，正确答案显示，答题时间显示到秒，答题数量显示，正确数量显示，错误数量显示，正确率显示；
- 33.支持统一授课模式和自主学习模式自动切换功能，模式切换由老师控制；
- 34.统一授课模式下，所有临摹台均由老师控制；
- 35.支持分组教学功能；
- 36.支持老师对某个或某组学生自主学习控制功能；
- 37.支持从云端获取碑帖进行欣赏和临摹练习；
- 38.支持集字练习功能；
- 39.支持上课学生，每人一个账号登录功能；
- 40.支持单台独立运行，戴上耳机自主学习功能；
- 41.支持一键六步教学法功能；



42.支持学生通过自己账号登陆书法学习平台，拍照上传自己的书法作品，支持将软笔书写过程进行录制上传，录制的视频支持边写边讲解(即视频包含语音录制)，同时支持查看自己的历史作品和书写过程视频记录（该功能需配备教学互动系统）；

43.临摹台的学习书法软件平台有“润笔”和“洗笔”按钮，通过软件触控操作，笔洗自动出水；

44.须提供包含有“交互”、“数字”、“临摹台”关键字的软件著作权证书复印件盖厂家公章，并须提供厂商售后服务承诺函原件。

1.The copying machine is of integrated design and requires connection of no external auxiliary host system; it is iOS or Android system-based, easy for subsequent remote upgrading; HD copying: Students can do HD copying with traditional stationery such as Xuan paper, writing brushes (allowing for legibly copying electronic copybooks with length and width of less than 1cm);

2. The copying machine supports power over Ethernet. Simply by inserting one network cable into the network port of the machine, power connection and Internet access can be realized;

3. It supports eight-point touch control, and thus the system can be directly manipulated by using fingers; it supports split screen touch control - namely, touch control is active for the left half of the screen where demonstrative character videos can be played, paused or speeded up based on the learning progress and need, and the volume can be regulated, while touch control is inactive for the right half of the screen where the demonstrative character copybook being played is set for replication and imitation; it also support automatic zooming of a rubbing by tapping the screen consecutively for twice;

4. Wide view angle: 80°/80°/80°/80° (top/bottom/left/right)

5. Pictures of works can be taken at the interactive terminal and automatically uploaded to the teacher's side;

6. The copying screen can sustain a load of no less than 60kg without cracking;



7. Waterproofness: The copying screen supports waterproofness;
8. Wear resistance: The panel of the copying area can withstand no fewer than 100,000 runs of natural frictions without bearing any scratch;
9. Eye protection: It emits soft light for eye protection, with the brightness of no greater than 260cd/m<sup>2</sup>;
10. RJ45 port and 100M self-adaptation are supported;
11. It supports WiFi interface, 802.11b/g/n; 12. It supports microphone voice recording;
12. Copying screen display size:≥45cm×25cm; resolution: ≥1920×1080;
13. The copying screen has an automatic light sensing function that enables it to automatically regulate the brightness according to the ambient lighting condition. When the ambient light intensifies, the screen automatically lights up; when the ambient light weakens, the screen automatically dims;
14. Built-in speaker:
15. For convenient and safe use by students, the copying machine has external split-type ports: headphone jack, USB port, microphone port, power switch; the split-type ports are embedded in the front side of the copying desktop (close to the student seats);
16. It supports rubbings copying in the autonomous learning mode;
17. Calling and sign-in by touch control is supported;
18. Student-side software can be updated via the cloud platform;
19. Volume and brightness can be regulated via software;
20. The overall system can be upgraded by using one button, and stone rubbings can be updated by using one button;
21. The following not less than 10 software systems can be directly manipulated by touch control: exercise system, video resource base system, stone rubbings system, course system, calligraphy knowledge base system, review system, calligraphy masters introduction, collection and creation system, question bank system, calligraphy masters' course system and other functions;



22. A copying machine supports login with any account, and the system will automatically record the learning process of each account;
23. Stone rubbings system: It supports eight-point touch control for zooming with fingers, and electronic felt for imitation. The electronic felt can be zoomed by touch control and set at any location. It also supports searching and selecting a stone rubbing by age, font or author and other functions;
24. Exercise system: It supports font typesetting by writing style, author, font, writing tool, stroke, radical or structure; it also supports character cell number setting, varied background among Chinese calligraphy grid patterns (including cross-diagonal, cross, nine-square, cross-square, blank-square patterns), and one-button clearing and other functions;
25. Video resource base system: This system has gathered video teaching courses offered by calligraphers specialized in four writing styles (including but not limited to Ou, Yan, Liu and Zhao styles), which have incorporated strokes, radicals and demonstrative characters;
26. Course system: This system has gathered not less than 500 class hours of courses, including but not limited to 100 class hours of courses on each of the Ou, Yan, Liu and Zhao 4 styles;
27. Calligraphy knowledge base: It comprises but not limited to 6 segments (including calligraphy fundamentals, copying and creation, a brief history of Chinese calligraphy, ancient calligraphy theories, seal cutting, general knowledge on writing with hard-tipped pens), includes more than 5,000 knowledge entries, and allows for full-text search by key words;
28. Review system: This system automatically records previous exercise data, and makes it easy for students to review based on historical records on exercise;
29. Collection and creation system: This system supports calligraphic works collection and creation in forms of folding fan, circular fan, banner, streamer, square paper, couplet and scroll;



30. Calligraphy masters' course system: This system contains video courses offered by experts with publisher identification and independent intellectual property rights;
31. The course software supports character formation games, and can be manipulated by students by touch control. It allows students to mark single ticks or double ticks on the copying machine by using fingers;
32. Question bank and examination system: This system supports students independently log into the question bank software and select any question of writing style, calligrapher or calligraphy history to answer. It supports selecting all by using one button, answer sheet option, checking detailed answer to each question, direct question switching, and automatic evaluation: question descriptions, display of correct answers, response time in second, number of questions answered, number of correct answers, number of incorrect answers, and percent of correct answers;
33. It supports automatic switching between unified teaching mode and independent learning mode; mode switching is subject to control by the teacher;
34. In the unified teaching mode, all copying machines are controlled by the teacher;
35. It supports group teaching;
36. It supports a teacher exerts control over independent learning of an individual or a group of student;
37. It supports acquisition of stone rubbings from the cloud for appreciation and imitation practice;
38. It supports calligraphic works collection for exercise;
39. It supports one account for each student in the class to log in;
40. It supports independent operation of a single machine and independent learning with the earphone on;
41. It supports six-step teaching with one button;
42. It supports students log in the calligraphy learning platform with respective accounts, take and upload pictures of their calligraphy works, and video the process of writing with a writing brush (including voice recording); it also supports students view



historical records on their own works and writing process videos (this function shall be provided along with the teaching interactive system);

43. The calligraphy learning software platform of the copying machine is provided with "Wet Brush" and "Wash Brush" buttons for touch control, with automated water supply to the writing-brush washer;

44. It is required to provide a copy of software copyright certificate bearing the key words, "interactive", "digital" and "copying machine" affixed with official seal of the manufacturer, as well as an original letter of commitment to after-sales services from the manufacturer.

**修改为:**

**Modified as:**

1.一体化设计，无需外接任何辅助主机系统，基于 iOS 或者 Android 系统，方便后续远程升级；高清临摹：支持学生用宣纸、毛笔传统的方式进行高清临摹（能清楚临摹长宽均不大于 1 厘米的电子字帖）；

2.临摹台支持网络供电功能，具备不少于八点触控功能；支持统一授课模式和自主学习模式自动切换、通过互动终端拍摄作品并自动上传到教师端、自主学习模式下的碑帖临摹、触控点签、学生端软件自动在云平台上更新、一键系统整体升级、一键自动更新碑帖、从云端获取碑帖进行欣赏和临摹练习、集字练习、单台独立运行自主学习、一键六步教学法等功能；

3.支持学生通过自己账号登陆书法学习平台，拍照上传自己的书法作品，支持将软笔书写过程进行录制上传，录制的视频支持边写边讲解（即视频包含语音录制），同时支持查看自己的历史作品和书写过程视频记录（该功能需配备教学互动系统）；

4.可实现分组教学，老师可对某个或某组学生自主学习控制功能；

5.直接触控操作不少于 10 套软件系统：练习系统、视频资源库系统、碑帖系统、课程系统、书法知识库系统、复习系统、名家介绍、集创系统、题库系统、名家课堂系统等功能；



6.摹帖屏显示尺寸： $\geq 45\text{cm} \times 25\text{cm}$ ；分辨率： $\geq 1920 \times 1080$ ；可承重不低于 60kg 无裂痕；防水耐磨，具备护眼功能、自动感光功能；

7.高可视角度： $80^\circ/80^\circ/80^\circ/80^\circ$ （上下左右）；

8.支持 RJ45 接口，100M 自适应；

9.支持 WiFi 接口，802.11b/g/n/ac 等；

10.支持麦克语音录制功能；

11.内置音箱；外置分体式接口：耳机插孔、USB 接口、麦克接口、电源开关，并将分体式接口嵌入在临摹桌桌面前侧（学生座位一侧）；

12.须提供该软件的著作权证书复印件。

1. The copying machine is of integrated design and requires connection of no external auxiliary host system; it is iOS or Android system-based, easy for subsequent remote upgrading; HD copying: Students can do HD copying with traditional stationery such as Xuan paper, writing brushes (allowing for legibly copying electronic copybooks with length and width of less than 1cm);

2. It supports eight-point touch control, and thus the system can be directly manipulated by using fingers; It supports automatic switching between the unified teaching mode and self-learning mode, enables capturing of works through interactive terminals and automatic uploading to the teacher's end, allows for copying of steles in the self-learning mode, provides touchpoint signing, ensures automatic updates of student-side software on the cloud platform, offers one-click system-wide upgrades, facilitates one-click automatic update of steles, enables appreciation and copying practice of steles fetched from the cloud, provides character practice, allows independent operation for self-learning on a single device, and includes features such as the one-click six-step teaching method.

3. It supports students log in the calligraphy learning platform with respective accounts, take and upload pictures of their calligraphy works, and video the process of writing with a writing brush (including voice recording); it also supports students view historical records on their own works and writing process videos (this function shall be provided along with the teaching interactive system);



4. Enables group teaching, where teachers can have autonomous learning control over individual students or specific groups.
5. The following not less than 10 software systems can be directly manipulated by touch control: exercise system, video resource base system, stone rubbings system, course system, calligraphy knowledge base system, review system, calligraphy masters introduction, collection and creation system, question bank system, calligraphy masters' course system and other functions;
6. Copying screen display size:  $\geq 45\text{cm} \times 25\text{cm}$ ; Resolution:  $\geq 1920 \times 1080$ ; Load-bearing capacity: not less than 60kg without cracks; Waterproof, wear-resistant, equipped with eye protection and automatic photosensitivity function;
7. High viewing angle:  $80^\circ/80^\circ/80^\circ/80^\circ$  (up/down/left/right);
8. Supports RJ45 interface, 100M adaptive;
9. Supports WiFi interface, 802.11b/g/n/ac, etc.;
10. Supports microphone voice recording function;
11. Built-in speakers; External split interface: headphone jack, USB interface, microphone interface, power switch, and embed the split interface on the front side of the copying desk (student seat side);
12. Copy of the copyright certificate of this software must be provided.

**序号：2：学生互动拍摄系统**

**S.N.: 2: Students' interactive photographing system**

**原规定：**

**Original:**

- 1.与交互式数字临摹台同一品牌，互动拍摄硬件与现有学生端临摹台的硬件无缝对接，硬件要嵌入到现有的学生书法桌上；互动拍摄硬件同时具有笔架功能，支持同时挂不少于三支毛笔；
- 2.通过 USB 连接交互式数字临摹台进行供电，要求 USB 线隐蔽； 3.现有学生端临摹台的软件完全支持互动拍摄硬件；
- 4.帧速率不低于 24 帧；



- 5.具备学生座位图功能，老师可管理班级、学生，并对学生进行排坐，形成清晰的座位图；
- 6.老师直接双击座位图上的学生姓名即可查看该学生书写过程，支持老师通过控制系统切换每一个学生的书写过程实时传输到大屏和其他同学的临摹台上欣赏查看；
- 7.一键收取作业:教师在中控台上可一键收取作业，作业按照学生座位图的顺序和位置关系进行排列；
- 8.支持书写过程分享到本班，便于老师与同学实时观看其他同学的书写过程及作品；
- 9.支持老师对任一学生的作品进行查看、讲评，并通过互动系统供其它学生观看讲评；
- 10.提供三年的维护及质保服务。

1. It is of the same brand with the interactive digital copying machine, and has photographing hardware that can be seamlessly connected with the student's side copying machine; the hardware needs to be embedded into the student's writing desk, and may also function as a brush rack for no less than three writing brushes;

2. The system sources power from the interactive digital copying machine via a USB connection

3. Software with the existing student's side copying machine can fully support interactive photographing hardware;

4. The frame rate is no less than 24 frames;

5. It has a student seat planning function that allows the teacher to manage classes and students and to seat students, forming a clear seat plan;

6. The teacher can directly double-tap a student's name on the seat plan to view the writing process of the student, switch among the writing processes of all students, and transmit the writing process of a student to the big screen and other students' copying machines for appreciation or viewing;



7. One-button work collection: The teacher can collect students' work by pressing one button on the central console; student's work collected will be arranged according to the sequence and locations of student seats in the student seat plan;
8. It supports sharing of writing processes to the class, so that the teacher and students can watch the writing processes and works of other students;
9. It supports the teacher viewing and commenting on works of each student, as well as allowing other students to watch the commenting via the interactive system;
10. Provide three- year maintenance and warranty service.

**修改为:**

**Modified as:**

- 1.与交互式数字临摹台兼容，互动拍摄硬件与现有学生端临摹台的硬件无缝对接，硬件要嵌入到现有的学生书法桌上；互动拍摄硬件同时具有笔架功能，支持同挂不少于三支毛笔；
- 2.通过 USB 连接交互式数字临摹台进行供电，要求 USB 线隐蔽；
- 3.现有学生端临摹台的软件完全支持互动拍摄硬件；
- 4.帧速率不低于 24 帧；
- 5.具备学生座位图功能，支持老师通过控制系统切换每一个学生的书写过程实时传输到大屏和其他同学的临摹台上欣赏查看；可一键收取作业；.支持老师对任一学生的作品进行查看、讲评，并通过互动系统供其它学生观看讲评；
- 6.提供三年的维护及质保服务。

1. It is of the same brand with the interactive digital copying machine, and has photographing hardware that can be seamlessly connected with the student's side copying machine; the hardware needs to be embedded into the student's writing desk, and may also function as a brush rack for no less than three writing brushes;

2. The system sources power from the interactive digital copying machine via a USB connection

3. Software with the existing student's side copying machine can fully support interactive photographing hardware;

4. The frame rate is no less than 24 frames;



5. Equipped with student seating chart function, supports teachers to switch and transmit the writing process of each student in real-time to the big screen and other students' copying desks for appreciation and viewing; Supports One-button work collection; It supports the teacher viewing and commenting on works of each student, as well as allowing other students to watch the commenting via the interactive system;
6. Provide three- year maintenance and warranty service.

**序号：3：智能资源矩阵式分发系统**

**S.N.: 3: Intelligent resource matrix distribution system**

**原规定：**

**Original:**

- 1.支持学生任意分组，支持每组一人或多人；
- 2.支持分组名称可自定义，点击组名称时每组成员的姓名单独标记；
- 3.支持对每组分发不同的字帖，字格的数量可自定义，字体的类型可自定义；
- 4.支持对每组分发不同的碑帖，学生可自己放大缩小碑帖；
- 5.支持对每组分发不同的作品，支持分发折扇、团扇、条幅、横幅、斗方、对联、中堂等作品功能；
- 6.支持对每组分发自主学习的软件模块；
- 7.与交互式数字临摹台同一品牌，须提供包含有“资源矩阵”关键字的软件著作权证书复印件盖厂家公章；
- 8.提供三年的维护及质保服务。

1. It supports student grouping in any way, including grouping by one student or by multiple students;
2. It supports user-defined group designation. When a group is tapped, members in the group will be separately identified;
3. It supports distribution of different copybooks to different groups; the number of grids and font type can be defined by the user;



4. It supports distribution of different stone rubbings to different groups; the stone rubbings can be zoomed in or out by the students;
5. It supports distribution of different works to different groups, and distribution of such works as folding fan, circular fan, banner, streamer, square paper, couplet and scroll;
6. It supports self-learning software module for distribution to each group;
7. It is of the same brand of the interactive digital copying machine, and shall be provided with a copy of software copyright certificate bearing the key word, "resource matrix", and affixed with manufacturer's official seal.
8. Provide three-year maintenance and warranty service.

修改为:

**Modified as:**

1. 支持教师对学生任意分组，支持每组一人或多人；
  2. 支持教师端对每组分发不同的字帖、碑帖、作品和自主学习软件模块等；
  3. 提供三年的维护及质保服务。
1. It supports student grouping in any way, including grouping by one student or by multiple students;
  2. It supports the teacher's end to distribute different character and copybook templates, works, and self-learning software modules to each group.
  3. Provide three-year maintenance and warranty service.

序号：4：智能兴趣体验书法学习软件

**S.N.: 4: Intelligent interest-oriented experimental calligraphy learning software**

原规定:

**Original:**

1. 支持教师对学生任意分组，支持每组一人或多人；
2. 支持分组名称可自定义，点击组名称时每组成员的姓名单独标记；



- 3.支持教师端向每组推送不同的书法兴趣体验游戏，书法体验学习软件不少于3种（提供软件功能截图）；
  - 4.支持学生识别包括但不限于颜、欧、柳、赵等不同书体的兴趣体验游戏，并能显示出同组竞争排名，以及识别错误、正确答案及遗漏识别的情况（提供软件功能截图）；
  - 5.支持字体结构练习书法兴趣体验游戏，系统对每一个学生的体验结果进行自动打分和排名；
  - 6.支持集字练习书法兴趣体验游戏；
  - 7.与交互式数字临摹台同一品牌，须提供包含有“智能兴趣体验”关键字的软件著作权证书复印件盖厂家公章；
  - 8.提供三年的维护及质保服务。
1. It supports student grouping by the teacher in any way, including grouping by one student or by multiple students;
  2. It supports user-defined group designation. When a group is tapped, members in the group will be separately identified;
  3. It supports the teacher side to push different interest-oriented experimental games in calligraphy, with no fewer than three types of experimental calligraphy learning software (snapshots of software functions are provided);
  4. It supports students to play the interest-oriented experimental game of recognizing different styles of calligraphic works including but not limited to Yan, Ou, Liu and Zhao etc. styles, and can display rankings of competing groups, misrecognition, correct answers and recognition omissions (snapshots of software functions are provided);
  5. It supports interest-oriented experimental games for practicing character structures; the system functions automatically to score and rank the practicing result of each student;
  6. It supports interest-oriented experimental games of calligraphic works collection for exercise;



7. It is of the same brand of the interactive digital copying machine, and shall be provided with a copy of software copyright certificate bearing the key word, "intelligent interest-oriented experience", and affixed with manufacturer's official seal.

8. Provide three-year maintenance and warranty service.

修改为:

**Modified as:**

- 1.支持教师对学生任意分组，支持每组一人或多人；
- 2.支持教师端向每组推送学生识别字体类、字体结构练习类、集字练习类等不同的书法兴趣体验游戏，书法体验学习软件不少于 3 种（提供软件功能截图）；
- 3.提供三年的维护及质保服务。

1. It supports student grouping by the teacher in any way, including grouping by one student or by multiple students;

2. It supports the teacher side to push different interest-oriented experimental games in calligraphy, with no fewer than three types of experimental calligraphy learning software (snapshots of software functions are provided);

3. Provide three-year maintenance and warranty service.

序号：5：多教室同步授课系统

**S.N.: 5: Multiple-classroom synchronous teaching system**

原规定:

**Original:**

1.系统硬件：便携式硬件，支持 HDMI 接口和网络接口，2 个 USB 接口，长宽高 ≤18cm×18cm×4cm，质量≤500 克；

2.系统软件：能同步传输教师现场授课的声音、课程界面、点评操作界面、教师上课场景、以及老师亲自用毛笔示范的过程；为方便支持多楼、多教室的同步传输，传输方式支持网络接口方式；

3.支持其他教室的老师能独立使用连接在多教室同步授课系统便携式硬件上的拍摄设备进行书写示范直播，并同步到大屏；



4.与交互式数字临摹台同一品牌，须提供包含有“多教室同步”关键字的软件著作权证书复印件盖厂家公章；

5.提供三年的维护及质保服务。

1. System hardware: Portable hardware, HDMI and Internet interfaces supported, 2 USB ports, L×W×H≤18cm×18cm×4cm, mass ≤500g;

2. System software: It can synchronously transmit the live teaching voice of a teacher, the course interface, the commenting interface, the class scene and the demonstrative writing process of the teacher; for synchronous transmission in several classrooms and on multiple floors, Internet interface is supported;

3. It supports a teacher in another classroom to independently use cameras on the portable hardware of the synchronous teaching system in multiple classrooms to perform live demonstration of writing, and synchronize the writing process to a large screen;

4. It is of the same brand of the interactive digital copying machine, and shall be provided with a copy of software copyright certificate bearing the key word, "multiple-classroom synchronization", and affixed with manufacturer's official seal.

5. Provide three-year maintenance and warranty service.

**修改为：**

**Modified as:**

1.系统硬件：便携式硬件，支持 HDMI 接口和网络接口，2 个 USB 接口，长宽高 ≤18cm×18cm×4cm，质量≤500 克；

2.系统软件：能同步传输教师现场授课的声音、课程界面、点评操作界面、教师上课场景、以及老师亲自用毛笔示范的过程；为方便支持多楼、多教室的同步传输，传输方式支持网络接口方式；

3.支持其他教室的老师能独立使用连接在多教室同步授课系统便携式硬件上的拍摄设备进行书写示范直播，并同步到大屏；

4.提供三年的维护及质保服务。

1. System hardware: Portable hardware, HDMI and Internet interfaces supported, 2 USB ports, L×W×H≤18cm×18cm×4cm, mass ≤500g;



2. System software: It can synchronously transmit the live teaching voice of a teacher, the course interface, the commenting interface, the class scene and the demonstrative writing process of the teacher; for synchronous transmission in several classrooms and on multiple floors, Internet interface is supported;
3. It supports a teacher in another classroom to independently use cameras on the portable hardware of the synchronous teaching system in multiple classrooms to perform live demonstration of writing, and synchronize the writing process to a large screen;
4. Provide three-year maintenance and warranty service.

**序号：6：教师中控条案**

**S.N.: 6: Teacher's central control table**

**原规定：**

**Original:**

- 1.规格：约 180cm×80cm×75cm，实木结构；
- 2.古典书桌设计，烤漆处理；
- 3.全部卯榫结构；
- 4.支持将本方案中的中控、教师手绘屏、直播系统集成在中控条案中；
- 5.门字砚：约 20cm×13cm×4cm，材质：鱼子石；
- 6.毛笔笔架：约 36cm×36cm×10cm，材质：鸡翅木；
- 7.笔洗：约 7.9cm×20cm，材质：优质陶瓷；
- 8.砚台水滴：陶瓷；
- 9.镇尺：加重型黑梓木；
- 10.笔搁：卧式笔架，材质：实木；
- 11.毛毡：约 1×2 米，可以水洗反复使用；
- 12.笔筒：约 12.5cm×9.5cm，材质：黑檀；
- 13.毛笔套装：笔头材质为纯狼毫；笔杆材质：天然黑湘妃；大号毛笔尺寸：出锋 3.8cm、口径 1.1cm、全长 26.5cm；中号毛笔：出锋 3.3cm、口径 0.9cm、全长 26.0cm；小号毛笔：出锋 2.8cm，口径 0.8cm，全长 25.5cm；



14. 配套实木方凳 1 个

1. Specification: about 180cm×80cm×75cm, solid wood structure;
2. Classic desk design and baking paint treatment;
3. Full tenon structure;
4. It supports integration of central control according to the plan, teacher's hand-writing screen and live streaming system in the central control table;
5. Door-shaped inkstone: about 20cm×13cm×4cm, material: oolite;
6. Writing brush rack: about 36cm×36cm×10cm, material: Millettia Laurentii;
7. Writing-brush washer: about 7.9cm×20cm, material: Superior ceramics;
8. Inkstone water dropper: Ceramic;
9. Paperweight: Heavy catalpa;
10. Brush rest: horizontal brush rack; material: Solid wood;
11. Felt: about 1×2m, washable for repeated use;
12. Brush container: about 12.5cm×9.5cm, material: ebony;
13. Writing brush package: The head is made of pure weasel's hair; the shaft is made of natural black mottled bamboo; large writing brush size: tip: 3.8cm, caliber 1.1cm, full length 26.5cm; medium writing brush: tip: 3.3cm, caliber 0.9cm, full length 26.0cm; small writing brush: tip 2.8cm, caliber 0.8cm, full length 25.5cm;
14. A solid wood square stool is provided along;

修改为:

**Modified as:**

1. 规格:  $\geq 180\text{cm} \times 80\text{cm} \times 75\text{cm}$ , 实木结构, 古典书桌设计, 烤漆处理;
2. 支持将本方案中的中控、教师手绘屏、直播系统集成在中控条案中;
3. 配套: 实木方凳 1 个; 门字砚:  $\geq 20\text{cm} \times 13\text{cm} \times 4\text{cm}$ , 材质: 鱼子石; 毛笔笔架:  $\geq 36\text{cm} \times 36\text{cm} \times 10\text{cm}$ , 材质: 鸡翅木; 笔洗:  $\geq 7.9\text{cm} \times 20\text{cm}$ , 材质: 优质陶瓷; 砚台水滴: 陶瓷; 镇尺: 加重型黑梓木; 笔搁: 卧式笔架, 材质: 实木; 毛毡:  $\geq 1 \times 2$  米, 可以水洗反复使用; 笔筒:  $\geq 12.5\text{cm} \times 9.5\text{cm}$ , 材质: 黑檀; 毛笔套装: 笔头材质为纯狼毫, 笔杆材质: 天然黑湘妃, 大号毛笔尺寸: 出锋 3.8cm、口径 1.1cm、全长 26.5cm, 中号毛笔: 出锋 3.3cm、口径 0.9cm、全长 26.0cm, 小号毛



笔：出锋 2.8cm，口径 0.8cm，全长 25.5cm。

1. Specification: about 180cm×80cm×75cm, solid wood structure, classic desk design and baking paint treatment;
2. It supports integration of central control according to the plan, teacher's hand-writing screen and live streaming system in the central control table;
3. A solid wood square stool is provided along; Door-shaped inkstone: about 20cm×13cm×4cm, material: oolite; Writing brush rack: about 36cm×36cm×10cm, material: Millettia Laurentii; Writing-brush washer: about 7.9cm×20cm, material: Superior ceramics; Inkstone water dropper: Ceramic; Paperweight: Heavy catalpa; Brush rest: horizontal brush rack; material: Solid wood; Felt: about 1×2m, washable for repeated use; Brush container: about 12.5cm×9.5cm, material: ebony; Writing brush package: The head is made of pure weasel's hair; the shaft is made of natural black mottled bamboo; large writing brush size: tip: 3.8cm, caliber 1.1cm, full length 26.5cm; medium writing brush: tip: 3.3cm, caliber 0.9cm, full length 26.0cm; small writing brush: tip 2.8cm, caliber 0.8cm, full length 25.5cm;

序号：7：书法临摹桌

**S.N.: 7: Desk for calligraphy copying**

原规定：

**Original:**

1. 实木结构，桌子两侧加曲木六角形镂空侧山板，镂空尺寸≤25cm×40cm；
2. 规格：≥134cm×60cm×75cm；
3. 全部卯榫结构；
4. 古典书桌设计，净味漆；
5. 交互式数字临摹台能无缝嵌入至书法桌，嵌入后临摹台与书法桌表面水平；
6. 书法桌学生一侧具有嵌入式临摹台开关，音频接口，USB 接口；桌面厚度不能低于 3.5 厘米；
7. 书法桌底部有抽屉，方便放书写宣纸；
8. 书法桌前侧具有整块挡板，2 个独立镂空雕花，镂空雕花尺寸≤35cm×35cm；
9. 配套笔搁；



10. 配套实木方凳 2 个。

1. Solid wood structure, with hexagonal hollow-out bendwood side panels; the hollow-out size  $\leq 25\text{cm} \times 40\text{cm}$ ;
2. Specification:  $\geq 134\text{cm} \times 60\text{cm} \times 75\text{cm}$ ;
3. Full tenon structure;
4. Classic desk design and air-purifying paint;
5. The interactive digital copying machine can be seamlessly embedded into a writing desk, with the top surface flush with the writing desktop;
6. On the student-side of the writing desk, there is an embedded copying machine desk, audio port and USB port; the desktop shall be no less than 3.5cm thick;
7. At the bottom of the writing desk is a drawer for placement of Xuan paper;
8. At the front of the writing desk is a whole board and 2 independent hollow-out carvings; each carving is sized  $\leq 35\text{cm} \times 35\text{cm}$ ;
9. Brush rest provided along;
10. Two solid wood square stools are provided along.

修改为:

**Modified as:**

1. 实木结构，规格： $\geq 134\text{cm} \times 60\text{cm} \times 75\text{cm}$ ，古典书桌设计，净味漆；
  2. 交互式数字临摹台能无缝嵌入书法桌，嵌入后临摹台与书法桌表面水平；
  3. 书法桌学生一侧具有嵌入式临摹台开关，音频接口，USB 接口；桌面厚度不能低于 3.5 厘米；
  4. 书法桌底部有抽屉，桌前侧有整块挡板；
  5. 配套笔搁；配套实木方凳 2 个。
1. Solid wood structure, Specification:  $\geq 134\text{cm} \times 60\text{cm} \times 75\text{cm}$ , Classic desk design and air-purifying paint;
  2. The interactive digital copying machine can be seamlessly embedded into a writing desk, with the top surface flush with the writing desktop;
  3. On the student-side of the writing desk, there is an embedded copying machine desk, audio port and USB port; the desktop shall be no less than 3.5cm thick;



4. At the bottom of the writing desk is a drawer, at the front of the writing desk is a whole board.

5. Brush rest provided along; Two solid wood square stools are provided along.

序号：8：智能笔洗系统

S.N.: 8: Intelligent writing-brush washer system

原规定：

**Original:**

1.教师端通过书法教学系统软件控制笔洗，具备一键启用、禁用笔洗系统和教师端一键洗笔功能，当启用笔洗系统时，学生可以通过临摹台控制自己座位上的笔洗，当开启一键洗笔功能时，洗笔系统会自动出水；

2.洗笔系统具备触点式开关控制模式、临摹台控制模式和教师端系统一键洗笔模式；

3.触点式开关控制模式下，学生每启动一次触点开关，获得约 30 秒的洗笔时间，约 30 秒后笔洗自动关闭；

4.学生触控临摹台软件界面控制笔洗，可以选择润笔功能、洗笔功能选项，学生可以根据需要进行选择；

5.教师端系统一键洗笔功能下，教师端系统可以一键开启所有临摹台的笔洗，学生获得约 30 秒的洗笔时间，约 30 秒后笔洗自动关闭；

6.笔洗系统启动后，笔洗漏斗内始终保持不低于约 2cm 高水位的存水量，以方便洗笔；

7.笔洗系统的出水口不超过桌面(在笔洗漏斗的上口平面以下)、笔洗系统的漏斗具有防溢出功能；

8.与交互式数字临摹台同一品牌，须提供包含有“智能笔洗系统”关键字的软件著作权证书复印件盖厂家公章；

9.提供三年的维护及质保服务。

1. The teacher side has control over the writing-brush washer via the calligraphy teaching system software, capable of enabling and disabling the writing-brush washer system simply by using one button and starting writing-brush washing by using one



button; when the writing-brush washer system is enabled, students can control the writing-brush washer on respective copying machine; when the Wash Brush button is enabled, water will automatically flow out from the writing-brush washer system;

2. The writing-brush washer system can be controlled by a contact-type switch, a copying machine or the Wash Brush button on the teacher's side;

3. In the contact-type switch control mode, a student may have about 30s for writing brush washing by triggering the switch, and the writing-brush washer system will automatically shut down upon the lapse of about 30s;

4. A student may also control writing-brush washing via touch control on the copying machine software interface, where Wet Brush and Wash Brush functions are available for selection by the student as necessary;

5. In the teacher-side Wash Brush button control mode, the Wash Brush button of the teacher-side system can start writing-brush washers on all copying machines; when the button is pressed, students have about 30s for writing brush washing, and upon the lapse of about 30s the writing-brush washer system will automatically shut down;

6. After the writing-brush washer system is started, the writing-brush washer funnel will constantly maintain a water level of no less than around 2cm for writing-brush washing;

7. The water outlet of the writing-brush system shall be no higher than the desktop (and below the upper opening plane of the writing-brush washer funnel); the funnel has an anti-overflow function;

8. It is of the same brand of the interactive digital copying machine, and shall be provided with a copy of software copyright certificate bearing the key word, "intelligent writing-brush washer system, and affixed with manufacturer's official seal.

9. Provide three-year maintenance and warranty service.

**修改为:**

**Modified as:**

1.教师端通过书法教学系统软件控制笔洗，具备一键启用、禁用笔洗系统和教师端一键洗笔功能；



2.笔洗系统具备触点式开关控制模式、临摹台控制模式和教师端系统一键洗笔模式；

3.笔洗系统的出水口不超过桌面(在笔洗漏斗的上口平面以下)，漏斗具有防溢出功能，笔洗系统启动后，笔洗漏斗内始终保持不低于约 2cm 高水位的存水量；

4.提供三年的维护及质保服务。

1. The teacher side has control over the writing-brush washer via the calligraphy teaching system software, capable of enabling and disabling the writing-brush washer system simply by using one button and starting writing-brush washing by using one button;

2. The writing-brush washer system can be controlled by a contact-type switch, a copying machine or the Wash Brush button on the teacher's side;

3. The water outlet of the writing-brush system shall be no higher than the desktop (and below the upper opening plane of the writing-brush washer funnel); the funnel has an anti-overflow function; After the writing-brush washer system is started, the writing-brush washer funnel will constantly maintain a water level of no less than around 2cm for writing-brush washing;

4. Provide three-year maintenance and warranty service.

**序号：9：电子点签系统**

**S.N.: 9: Electronic calling and sign-in system**

**原规定：**

**Original:**

1.可按年级、班级进行自动电子排座；

2.支持自动按行、列随机或者自动排位；

3.支持排位信息自动发布到相对应的交互式数字临摹台，并把学生姓名显示在临摹台上；

4.学生按照临摹台上的姓名就坐，并通过手指触控的方式点击自己的姓名，实现签到功能；

5.老师自动获取学生签到信息，明确知道学生上课考勤情况(提供软件功能截图)；



- 6.支持自动统计学生考勤情况，查看历史详情；
- 7.支持批量导入学生信息；
- 8.与交互式数字临摹台同一品牌，须提供包含有“电子”、“点签”关键字的软件著作权证书复印件盖厂家公章；
- 9.提供三年的维护及质保服务。

1. It can automatically arrange seats by grade or class in an electronic manner;
2. It supports random or automatic seat arrangements by row or column;
3. It supports automatic transmission of seat arrangement information to corresponding interactive digital copying machine, and display corresponding student's name on the copying machine;
4. Each student is seated by the copying machine that shows his/her name, and taps his/her names on the screen to sign in;
5. The teacher can automatically receive information on students' sign-in to know attendance of the students (software function snapshots are provided);
6. It supports automatic recording of students' attendance and viewing historical records;
7. It supports batch import of students' information;
8. It is of the same brand of the interactive digital copying machine, and shall be provided with a copy of software copyright certificate bearing the key words, "electronic" and "calling and sign-in" and affixed with manufacturer's official seal.
9. Provide three-year maintenance and warranty service.

**修改为：**

**Modified as:**

- 1.支持批量导入学生信息；自动统计学生考勤情况，查看历史详情；学生可通过手指触控的方式点击自己的姓名，实现签到；老师能自动获取学生签到信息，明确知道学生上课考勤情况（提供软件功能截图）；
- 2.提供三年的维护及质保服务。

1. It supports batch import of students' information; Automatic recording of students' attendance and viewing historical records; Students could tap his/her names on the



screen to sign in; The teacher can automatically receive information on students' sign-in to know attendance of the students (software function snapshots are provided);

2. Provide three-year maintenance and warranty service.

序号：10：笔尖跟踪四机位书画教学展示台

**S.N.: 10: Four-position brush-tip tracking calligraphy and drawing teaching demonstration platform**

原规定：

**Original:**

- 1.拍摄架：全金属构架,铝合金底座；
- 2.配置 1 台跟踪摄像机、2 台双镜头摄像机、1 台单镜头摄像机；
- 3.跟踪摄像机智能跟踪笔尖细节，教师示范书写时，摄像机能上下左右自动旋转变换角度，实现对毛笔笔尖跟踪拍摄；
- 4.摄像机具有网络接口，内置镜头，输出视频帧速率：每秒不少于 25 帧；
- 5.支持镜头自动变焦，支持通过软件调整缩放倍数并自动对焦，顶置摄像机和左上方摄像机内置双镜头；
- 6.顶置摄像机和左上方摄像机支持 $\geq 10$  倍光学变焦；
- 7.支持保存镜头位置，需要时可一键调出，自动恢复到相应位置；
8. 与交互式数字临摹台同一品牌，提供产品实物图片。支持镜头自动变焦，支持通过软件调整缩放倍数并自动对焦，顶置摄像机和左上方摄像机内置双镜头；

1. Camera stand: Full metal frame and aluminum alloy base;
2. 1 set of tracking camera, 2 sets of double-lens cameras and 1 set of single-lens camera are provided;
3. The tracking camera can automatically turn in all directions to intelligently track detailed motion of the writing brush tip when the teacher does demonstrative writing;
4. The camera is provided with an Internet port and a built-in lens, with video output frame rate of no less than 25 frames per second;
5. It supports zooming of the lens, modification of the zoom factor via software, automatic focusing, top-mounted camera and built-in twin lens in the upper left camera;



6. The top-mounted camera and the upper left camera supports 10x optical zooming;
7. It supports saving lens location, so that the lens can be called out and restored to corresponding position by pressing a button when needed.
8. It is of the same brand with the interactive digital copying machine; a picture of the physical product is provided.

修改为:

**Modified as:**

- 1.配置拍摄架: 全金属构架,铝合金底座; 配置 1 台跟踪摄像机、2 台双镜头摄像机、1 台单镜头摄像机;
- 2.摄像机具有网络接口, 内置镜头, 输出视频帧速率: 每秒不少于 25 帧;
- 3.能实现跟踪摄像机智能跟踪笔尖细节; 支持镜头自动变焦, 顶置摄像机和左上方摄像机支持 $\geq 10$  倍光学变焦; 支持保存镜头位置, 需要时可一键调出, 自动恢复到相应位置;
4. 与交互式数字临摹台兼容, 提供产品实物图片。

1. Configure the camera stand: Full metal frame and aluminum alloy base; 1 set of tracking camera, 2 sets of double-lens cameras and 1 set of single-lens camera are provided;
2. The camera is provided with an Internet port and a built-in lens, with video output frame rate of no less than 25 frames per second;
3. Capable of achieving intelligent tracking of the camera to follow the details of the pen tip; supports automatic lens zooming, with top-mounted and upper left cameras supporting  $\geq 10$ x optical zoom; supports saving camera positions for one-click retrieval when needed, with automatic restoration to the respective positions.
4. Compatible with interactive digital copying machine, and providing actual product images.

序号: 11: 笔尖跟踪直播示范系统

S.N.: 11: Brush-tip tracking live demonstration system

原规定:



**Original:**

- 1.系统支持连接书画教学展示台的四台摄像机同时拍摄直播、录像，其中跟踪摄像头在左方智能跟踪笔尖，两台摄像机从正上方和左侧方侧向进行同时拍摄录课，另一台摄像机录制教师授课画面；
- 2.软件界面同时显示正面、侧面、教师、跟踪四个画面，并在画面上进行标识，画面上清楚标识正面、侧面、教师、跟踪，支持单镜头画面、双镜头画面、三镜头画面、画中画四种录播模式功能，四种显示模式都直接双击切换；支持三台摄像机的视频录制、多个画面同步回放功能；支持播放文件时间显示数字走表功能；支持在软件内直接修改视频、图片文件名，支持拍摄的视频文件自带拍摄年、月、日、时、分、秒信息；
- 3.支持快镜头播放、暂停功能；
- 4.支持慢镜头播放、暂停功能；
- 5.支持通过软件调整缩放倍数；
- 5.支持在画面上任意批注功能；
- 7.教师在示范书写的时候，可以在界面同时展现要示范的例字的视频、例字多个字体、例字的多个碑帖，显示在软件摄像机拍摄的界面，方便老师临写，字帖可随意放大缩小，可随意放在软件界面的任何位置；
- 8.支持一键抓图、看图功能；
- 9.提供三年的维护及质保服务。

1. The system supports live streaming and video recording with the four cameras connected to the calligraphy and drawing teaching and demonstration platform; among the cameras, the tracking camera intelligently tracks the brush-tip on the left side, two cameras simultaneously video classes from the top and the left side, and the remaining camera records images of the teacher giving instructions;

2. The software interface simultaneously displays four images, i.e. the front view, the side view, the teacher and the tracking image, and the images are clearly identified as front, side, teacher and tracking, respectively. It supports recording and playing in single-lens image, dual-lens image, triple-lens image and PIP modes; the four displaying modes can be switched by double hits. It also supports videoing with three



cameras, synchronous playback of multiple images, digital timing display of a file being played, direct video/image file name modification within the software, recording of video files with timestamp;

3. It supports quick-motion play and pause;
4. It supports slow-motion play and pause;
5. It supports modification of the zoom factor via software;
6. It supports any annotation on the image;
7. The teacher can, when performing demonstrative writing, play the video of demonstrative character writing in multiple fonts, display multiple stone rubbings of the demonstrative character, and show the screen being recorded by the software camera for imitation; the copybook can be zoomed and placed at any position of the software interface;
8. It supports image capturing and viewing with one button;
9. Provide three-year maintenance and warranty service.

修改为:

**Modified as:**

- 1.系统支持连接书画教学展示台的四台摄像机同时拍摄直播、录像，其中跟踪摄像头在左方智能跟踪笔尖，两台摄像机从正上方和左侧方侧向进行同时拍摄录课，另一台摄像机录制教师授课画面；
- 2.软件界面同时显示正面、侧面、教师、跟踪四个画面，并在画面上进行标识；
- 3.支持快慢镜头播放、暂停、调整缩放倍数、一键抓图、看图功能；
- 4.教师在示范书写的时候，可以在界面同时展现要示范的例字的视频、例字多个字体、例字的多个碑帖，显示在软件摄像机拍摄的界面，方便老师临写，字帖可随意放大缩小，可随意放在软件界面的任何位置；
- 5.提供三年的维护及质保服务。

1. The system supports live streaming and video recording with the four cameras connected to the calligraphy and drawing teaching and demonstration platform; among the cameras, the tracking camera intelligently tracks the brush-tip on the left side, two



cameras simultaneously video classes from the top and the left side, and the remaining camera records images of the teacher giving instructions;

2. The software interface simultaneously displays four images, i.e. the front view, the side view, the teacher and the tracking image, and the images are clearly identified;

3. It supports fast and slow camera playback, pause, adjust zoom factor, one click capture, and view functions;

4. The teacher can, when performing demonstrative writing, play the video of demonstrative character writing in multiple fonts, display multiple stone rubbings of the demonstrative character, and show the screen being recorded by the software camera for imitation; the copybook can be zoomed and placed at any position of the software interface;

5. Provide three-year maintenance and warranty service.

#### 序号：12：场景式网络课堂教学系统

#### S.N.: 12: Scene-based online course teaching system

原规定：

#### Original:

1.软件必须是从智慧书法教学系统界面直接点击进入；

2.支持教师创建自己的直播课程，直播课程中可包含多个章节与课时，每个课时均可独立直播，也可单独设置直播时间；每个直播课程均可进行分类，支持课程定价以及点播时收费，课程可以设置课程名称，可上传图片封面；图片封面支持放大、缩小、剪切，还可实时预览效果，可设置简介，还可增加详细图文介绍。

图文介绍包含以下功能：文字加粗，文字倾斜，文字下划线，文字删除线，段落靠左，段落居中，段落靠后，段落居中自动调整，支持设置段落编号或设置段落图形，支持设置左右缩进，支持设置文字颜色，文字背景色，支持插入链接，支持插入图形，也可插入网络视频，支持清除格式；创建课程时，支持加入多个章节，每个章节均可独立定义名称；创建章节后，每个章节均可增加多个独立课时，均可自定义本课时名称；课时分为直播、点播两种，点播课时可上传视频文件供点播使用，上传视频文件后可自动计算并展现本课时时长；直播课时可定义直播



开始的日期以及时间，支持一键查看当前时间；编辑课时时，支持通过图标区分点播和直播课程，支持课时跨章节直接拖拽调整结构；

3.可分类查看拥有的所有课程列表，可通过名称或名称简写对课程进行模糊查询，可修改课程，修改内容包括：课程分类、课程名称、课程价格、课程封面、简介与详情；可重新编辑章节，还可重新编辑所有课时，编辑后自动进入审核状态；可删除课程，可查看最近的直播情况，支持查看针对某个课程的订单数量以及预估收益，具备一年期间的购买趋势分析图，可查看用户评价，并对不同星级评价分类统计百分比，可按各种星级评价查看该星级下的所有观看者的评价；学校可自定义收费课程，支持课程账户管理，支持银行卡管理，自动计算可提现金额，支持提现到指定银行卡，可查询累计收入，可以直方图方式展示最近一年内的购买趋势，可按照课程名称以及订单时间查询订购记录，对所有提现可按照提现时间列出明细，也可以根据提现时间进行查询，支持用户打赏，可查询一段时间内的打赏明细；

4.教师现场直播授课时，可切换不同的三维场景，三维场景支持不低于4个不同位置的场景大屏设置，不同的大屏可同时播放不同的内容；可将视频设置到三维场景的场景大屏，并在所有学生端同时进行播放；直播授课时，教师能同时调入6个或以上视频、3个或以上的摄像机、以及3个或以上的PPT在同一个界面上进行播放，并且上述的每个画面都可分别进行大小调整，学生端能同时观看上述的所有画面；教师可针对正在授课的任意一个视频设置任意的播放位置，并立即生效；可将教师的实时授课画面设置到三维场景的场景大屏并同时播放，并同步传输至学生端；教师在直播授课时支持随时插入PPT并进行及时播放，在直播授课时能设置字幕动画，并立即生效、学生进行观看；

5.课程同时支持直播与点播，支持下载所有课程的视频，支持视频本地编辑后再次上传更新，支持在线预览；现场直播授课的同时，系统可自动录制直播课堂的所有视频或者授课过程，并形成课程供学生进行回放观看；

6.三维场景支持远景、近景、特写，直播授课过程中教师可以任意切换三种方式，切换后学生端立即生效、进行观看；三维场景支持摇臂、进、退的动画模式，直播授课过程中教师可以任意切换三种动画模式，切换后学生端立即生效、进行观看；支持传输控制、减少噪点和减少阴影的设置，支持视频的亮度、对比度、伽



马值、色调的设置，支持设置帧率、颜色空间和输出大小；教师授课直播时可切换为画中画方式，直播授课时可设置让图像翻转，支持单独对音频进行音量大小、播放位置的设置，支持字幕编辑功能，并可选择字体、大小、颜色；支持文字和图片的滚动设置，支持设置滚动方向和速度，文字样式可设置加粗、下划线、删除线、倾斜；

7.客户端软件必须是从智慧书法教学系统界面直接进入；

8.支持查看当前以及即将开播的直播课程，可查看当前的热门课程，还可查看全部可用课程，可查询当前以及随后一周内的正在直播的课程，以及待直播的课程；直播课程开始前，系统自动为订阅用户发送提醒收看的短信，可查询最新课程和热门课程，可查看课程列表以及课程的详细信息，可查看教师介绍以及课程介绍，教师介绍包括教师的个人详情，还包括教师的所有已开放的在线课程，包括直播与点播课程；课程详情中包含，课程的介绍，以及课程的章节与所有具体课时，每个课时均可显示课程时长，观看完毕后系统可自动记录并调取本课程最后一次所学的课时，支持从此课时后继续学习；可查看本课程的热门程度以及订购费用；

9.支持查看学习历史记录，并可进行复习；

10.可查看个人的所有订单，以及费用明细，可通过课程名称以及订单时间查询订单详情，支持修改个人信息，包括昵称、手机号码以及头像，头像支持放大、缩小、剪切，还可实时预览效果；

11.支持通过安卓以及 IOS 的微信小程序参与直播或点播，支持轮播图，轮播图中可进入课程详情，课时详情可显示最近的系统消息，可查看最近一年或更长时间的系统消息，可查看当天进行的直播，可查看近期的热门课程，可按照课程的分类查询以及查看课程详情，可查看课程的封面、介绍、观众星级评价、评价人数、热门程度，可一键将课程或课时分享到微信群或微信好友，可查看课程的章节，以及每个章节下的详细课时；学生可对课程进行星级评价，查看当前的综合评分，查看各种评价的百分比；按照日期查看评价详情，支持通过课程名称，教师姓名对课程进行模糊搜索；保留最近的搜索历史记录，可用于快速搜索,支持对最近所有用户的搜索内容进行统计并将最热门的搜索内容提炼为热词，供用户进行快捷搜索；提供对教师的详细介绍，可查看教师的姓名，个人简介，以及此教师的课程列表，在课程列表中，可直接进入直播或点播；可自动记录学习历史并进入复



习功能，可显示对课程的学习进度，可统计当日学习时长，以及连续学习天数和累计学习天数；可收藏课时，并在个人中心查看所收藏课时，可将课时加入学习列表，可购买付费课时，并在个人中心查看已购课时，以及订单详情，可修改个人资料包括昵称、手机号，支持通过手机验证码验证用户个人身份；

12.与交互式数字临摹台同一品牌，须提供包含有“场景式网络课堂”关键字的软件著作权证书复印件；

13.提供三年的维护及质保服务。

1. It is required to access the software by directly tapping on the interface of the intelligent calligraphy teaching system;

2. It supports the teacher to create a live streaming course, which may contain more than one chapters and class hours, and each class hour can be independently presented or have the live presentation time separately set. Each live streaming course can be classified and priced as a VOD service; each course may have a title, and have an image uploaded as its cover. The cover image can be zoomed in/out or cut, and can be previewed in real time; a brief introduction can be provided; a detailed graphic introduction can also be added. Graphic introduction includes the following functions: to render text bold, to turn text italic, to underline text, to strike through text, to align paragraphs to the left; to center paragraphs, to align paragraphs to the right; to automatically adjust centered paragraphs. It also supports paragraph numbering or paragraph graphic setting, left and right indent setting, character color setting, character background color setting, link inserting, image inserting, online video inserting and format clearing. Upon course creation, it supports adding more than one chapters; each chapter can be independently defined and named. After a course is created, each chapter can be divided into more than one independent class hours. Each class hour may have its own title. Class hours can take the form of live streaming or VOD. In case of VOD, video files are uploaded for VOD service, and after a video file is uploaded, the system will automatically calculate and display the length of the class hour. In case of live streaming, the date and time of live streaming can be defined, and the current time can be viewed simply by pressing one button. Upon edition of a class



hour, VOD and live streaming can be distinguished by respective icons. The course structure can be changed by directly dragging a class hour cross chapters.

3. Lists of all courses can be viewed by classification; fuzzy course search by title or abbreviation is available. Courses can be modified, with respect to course classification, course title, course price, course cover, brief introduction and details. Chapters and all class hours can be edited, and following edition, they will automatically enter the review status. Courses can be deleted. Recent live streaming records can be viewed. The number of orders for certain courses and estimated earnings can be viewed. The system provides a one-year purchase trend analysis chart, and allows viewing users' comments. Comments are sorted statistically by star ratings to derive the percentage of each star rating; comments of all spectators can be viewed by star rating. Schools can define paid courses. The system supports management of course accounts and bank cards, functions automatically to calculate amounts that can be withdrawn, and allows withdrawal of such amounts can be withdrawn to designated bank accounts. The system also allows querying accumulated earnings, and can display the purchase trend in the recent one year in the form of a histogram. The system allows querying purchase records by a course title or order placement date, and can list all withdrawals in a chronological order of the withdrawals. The system also allows querying by the withdrawal date, supports users to pay gratuities, and allows querying details of gratuities within a certain period.

4. The teacher may switch between different three-dimensional scenes during a live streaming class; the three-dimensional scene can be displayed on large screens set at no fewer than 4 different positions, and each large screen can play different contents. A video may be set to play on the large screen of a three-dimensional scene and at the students' side simultaneously. During a live streaming class, the teacher may call 6 or more videos at a time, 3 or more cameras, and 3 or more ppt documents to play on the same interface; each of the images can be sized; all images can be simultaneously viewed at the students' side. The teacher may set the play position of any video during a class, and such setting takes effect immediately. Real-time teaching images of the



teacher can be set to simultaneously play on the large screens of three-dimensional scenes, and synchronously transmitted to the students' side. The teacher may interpose and timely play a PPT at any time during a live streaming class. During a live streaming class, animated subtitles can be set to take immediate effect for students to watch.

5. Courses are available in live streaming and recorded video forms. All course videos can be downloaded. Videos can be edited locally and then uploaded for updating. On-line preview is supported. During a live streaming class, the system can automatically record all videos of the live streaming class or the teaching process to form class videos for playback by students.

6. A three-dimensional scene can be a distant shot, a close shot or a special shot; during a live streaming class, the teacher may switch between the modes to take immediate effect for students to watch. A three-dimensional scene can be in the rocker arm, forward or backward animation mode; during a live streaming class, the teacher may switch between the modes to take immediate effect for students to watch. Transmission control, noise reduction and shade reduction can be set. Video brightness, contrast, gamma value and tone can be set. Frame rate, color space and output size can be set. During a live streaming class, the teacher can switch to the PIP mode. During a live streaming class, setting can be performed to realize image flipping. Audio volume and play position can be independently set. Subtitles can be edited; font, size and color can be selected. Text and image scrolling can be set; scrolling direction and speed can be set. Texts can be set bold, underlined, with strikethrough or italic.

7. Client software must be accessed directly from the interface of the intelligent calligraphy teaching system.

8. Courses being or to be started with live streaming can be viewed; current hot courses and all courses available can also be viewed. Courses being currently live-streamed, to be live-streamed in the ensuing one week and waiting to be live-streamed can be checked. Before start of a live-streamed course, the system will automatically send short messages to users that have subscribed the course, reminding them to attend the



course. Latest courses and hot courses can be checked. Course lists and details can be viewed; introduction to teachers and courses can also be viewed. Introduction to teachers includes personal information and available online courses (both live-streamed and VOD courses) of the teachers. Course details include course introduction, chapters and class hours; for each class hour, the course length can be displayed; when all class hours are completed, the system may automatically record and call the last class hour of the course for continuing learning after the class hour. Popularity and subscription price of the current course can be checked.

9. Historical learning records can be viewed and review can be conducted.

10. All orders and payment details of the user can be viewed; order details can be checked by corresponding course title and order placement date. Personal information can be modified, including nickname, mobile number and avatar; the avatar can be enlarged, shrunk down or cut, and the real-time effect can be previewed.

11. One can participate in a live streaming video or VOD via Android or WeChat mini program of IOS. Carousel is supported. When carousel is played, one can access the course details and class hour details. Recent system messages can be displayed. System messages in recent one year or a longer time can be checked. Live-streamed videos of the very day can be viewed. Recent hot courses can be viewed. Courses can be queried by classification and course details can be viewed. Course cover, introduction, star-rated comments, number of comments and degree of popularity can be viewed; courses or class hours can be shared to a WeChat group or a WeChat friend; chapters of a course and detailed class hours of each chapter can be viewed. Students can comment a course by star rating, and view the current comprehensive score of the course. The percentage of each star rating of comments can be viewed. Detailed comments can be viewed by date. Fuzzy search of a course can be performed by the course title or the teacher's name. Historical records on recent searches are retained for quick search; content recently searched by all users can be statistically summarized and the most searched are extracted as hot words for quick search by users. Detailed introduction to teachers is provided. Teacher's name, personal information and course



list can be viewed. Via the course list, live streamed videos or VOD can be directly accessed. Historical learning records can be maintained for review. The progress of learning a course can be displayed. The learning duration of the current day, consecutive learning days and cumulative learning days can be statistically recorded. Class hours can be collected. Collected class hours can be viewed at the Personal Center. Class hours can be added into the learning list. Paid class hours can be purchased. Purchased class hours and order details can be viewed at the Personal Center. Personal information, including nickname and mobile number, can be modified; user ID can be verified by a mobile phone verification code.

12. A copy of the software copyright certificate containing the keyword of "scene based online classroom", which is the same brand as the interactive digital copying platform should be provided;

13. Provide three-year maintenance and warranty service.

修改为:

**Modified as:**

1. 软件必须是从智慧书法教学系统界面直接点击进入;
2. 支持教师创建自己的直播课程, 课时分为直播、点播两种;
3. 可分类查看拥有的所有课程列表;
4. 教师现场直播授课时, 可切换不同的三维场景, 三维场景支持远景、近景、特写, 直播授课过程中教师可以任意切换三种方式, 三维场景支持不低于 4 个不同位置的场景大屏设置, 不同的大屏可同时播放不同的内容; 可将视频设置到三维场景的场景大屏, 并在所有学生端同时进行播放;
5. 课程同时支持直播与点播, 支持下载所有课程的视频, 支持视频本地编辑后再次上传更新, 支持在线预览; 现场直播授课的同时, 系统可自动录制直播课堂的所有视频或者授课过程, 并形成课程供学生进行回放观看;
6. 客户端软件必须是从智慧书法教学系统界面直接进入;
7. 支持查看当前以及即将开播的直播课程;
8. 支持查看学习历史记录;
9. 支持通过安卓以及 IOS 的微信小程序参与直播或点播;



10.提供三年的维护及质保服务。

1. It is required to access the software by directly tapping on the interface of the intelligent calligraphy teaching system;

2. It supports the teacher to create a live streaming course, class hours can take the form of live streaming or VOD.

3. Lists of all courses can be viewed by classification;

4. The teacher may switch between different three-dimensional scenes during a live streaming class; the three-dimensional scene can be displayed on large screens set at no fewer than 4 different positions, and each large screen can play different contents. A video may be set to play on the large screen of a three-dimensional scene and at the students' side simultaneously.

5. Courses are available in live streaming and recorded video forms. All course videos can be downloaded. Videos can be edited locally and then uploaded for updating. On-line preview is supported. During a live streaming class, the system can automatically record all videos of the live streaming class or the teaching process to form class videos for playback by students.

6. Client software must be accessed directly from the interface of the intelligent calligraphy teaching system.

7. Courses being or to be started with live streaming can be viewed;

8. Historical learning records can be viewed.

9. One can participate in a live streaming video or VOD via Android or WeChat mini program of IOS.

10. Provide three-year maintenance and warranty service.

序号：13：书法集创系统

S.N.: 13: Calligraphic works collection and creation system

原规定：

Original:



- 1.支持折扇、团扇、条幅、横幅、斗方、对联、中堂等模式集字创作功能，从1言到500言随意编辑排版功能，支持字体大小缩放功能；
- 2.支持自定义创作作品类型功能；
- 3.支持字体自适应大小功能，后面排版的字体自动适应第一个排版好的字体大小；
- 4.支持自适应角度调整，字体智能化自动调整摆放角度；
- 5.支持文件新建、修改、保存、放大缩小、临摹功能；
- 6.包含重修三门记、陋室铭、六体千字文、灵隐禅师塔铭、黄庭经、淮云院记、后赤壁赋、归来辞去、道德经、东铭、大学、感兴诗并序、多宝塔碑、颜勤礼碑、颜家庙碑、颜体合成创作、赵体合成创作等多个创作字体模块内容；
- 7.支持一键还原功能；
- 8.支持文字和拼音搜索功能；
- 9.支持双模式教学，即老师统一授课集创模块以及学生自主学习集创功能模块；
- 10.在配置互动模块时，支持老师一键收取学习集创练习作品的功能；
- 11.与交互式数字临摹台同一品牌，须提供包含有“集”、“创”关键字的软件著作权证书；
- 12.提供三年的维护及质保服务。

1. It supports calligraphic works collection and creation in forms of folding fan, circular fan, banner, streamer, square paper, couplet and scroll, as well as casual edition and typesetting from 1 to 500 characters and font size zooming;
2. It supports user-defined original works types;
3. It supports self-adaptive font size; namely, subsequent typeset fonts are automatically adapted to the first typeset font;
4. It supports self-adaptive angle adjustment and intelligent automated adjustment of font placement angle;
5. It supports creation, modification, saving, zooming and copying of files;
6. It contains content of multiple original font modules, including Rebuilt Three Gates Records, On My Humble Home (Liushi ming), The Thousand-Character Classic in Six Writing Styles, Zen Master's Inscription in Lingyin Zen Temple, Huangting Jing, Huaiyunyuan of Kunshan State, The Red Cliffs II, The Return: A Rhapsody, Tao Teh



King, Dongming, The Great Learning, Zhu Xi's Inspiration Poems and Preface, Duobao Pagoda Stele, Yan Qinli Stele, Yan Family Temple Stele, Synthetic Yan Style Composition, Synthetic Zhao Style Composition, and so on;

7. It supports one-button restoration function;

8. It supports search by characters and pinyin;

9. It supports dual-mode teaching, with a collection and creation module for unified teaching by the teacher and a collection and creation module for independent learning of students;

10. It supports the teacher to collect students' exercises by using one button by configuration of the interaction module;

11. It is of the same brand of the interactive digital copying machine, and the software copyright certificate bearing the key words, "collection" and "creation" should be provided.

12. Provide three-year maintenance and warranty service.

修改为:

**Modified as:**

1.支持折扇、团扇、条幅、横幅、斗方、对联、中堂等模式集字创作功能，从1言到500言随意编辑排版功能，支持自定义创作作品类型功能，支持一键还原、文字拼音搜索功能，支持老师统一授课以及学生自主学习的双模式教学；在配置互动模块时，支持老师一键收取学习集创练习作品功能。

2.包含重修三门记、陋室铭、六体千字文、灵隐禅师塔铭、黄庭经、淮云院记、后赤壁赋、归来辞去、道德经、东铭、大学、感兴诗并序、多宝塔碑、颜勤礼碑、颜家庙碑、颜体合成创作、赵体合成创作等多个创作字体模块内容；

3.提供三年的维护及质保服务。

1. It supports calligraphic works collection and creation in forms of folding fan, circular fan, banner, streamer, square paper, couplet and scroll, as well as casual edition and typesetting from 1 to 500 characters. It supports user-defined original works types; It supports functions of one-button restoration and search by characters and pinyin; It supports dual mode teaching with unified teaching by teachers and



autonomous learning by students; It supports the teacher to collect students' exercises by using one button by configuration of the interaction module;

2. It contains content of multiple original font modules, including Rebuilt Three Gates Records, On My Humble Home (Liushi ming), The Thousand-Character Classic in Six Writing Styles, Zen Master's Inscription in Lingyin Zen Temple, Huangting Jing, Huaiyunyuan of Kunshan State, The Red Cliffs II, The Return: A Rhapsody, Tao Teh King, Dongming, The Great Learning, Zhu Xi's Inspiration Poems and Preface, Duobao Pagoda Stele, Yan Qinli Stele, Yan Family Temple Stele, Synthetic Yan Style Composition, Synthetic Zhao Style Composition, and so on;

3. Provide three-year maintenance and warranty service.

序号：14：书法教学视频资源平台

S.N.: 14: Calligraphy teaching video resources platform

原规定：

**Original:**

- 1.人性化界面，方便进行控制、查询、播放及备课调整功能；
- 2.内置和教材同步的高清毛笔书法示范讲解视频；
- 3.含各年级课时的毛笔示范视频，针对每一个字，每一个笔画都有教学视频；
- 4.每个视频都配有教学音频讲解；
- 5.视频资源均为国内知名书法家亲自书写，每个字的视频为高清拍摄，方便观察运笔方式；
- 6.视频资源按照每一例字的结构、笔画、结体规律进行分类，可以一键式调取任一课时内的视频资料；
- 7.支持老师管理密码功能；
- 8.支持任意批注功能；
- 9.支持硬笔视频资源；
- 10.与交互式数字临摹台同一品牌，须提供包含有“教学”、“视频资源”关键字的软件著作权证书；
- 11.提供三年的维护及质保服务。



1. People-oriented interface for convenient control, query, play and teaching preparation adjustments.;
2. It contains high-definition demonstrative calligraphy lecture videos in synchronization with the textbook;
3. It contains demonstrative videos on writing with a writing brush for students of different grades, including teaching videos for writing of each character and each stroke;
4. Each video is accompanied with audio explanations;
5. Video resources contain processes of writing by domestically renowned calligraphy masters; the writing process video of each character is clearly produced for easy observation of writing techniques;
6. Video resources are sorted by the structure, stroke and forming principle of each demonstrative character; video data of any class can be called simply by pressing one butto;
7. It supports the teacher to manage passwords;
8. It supports any annotation;
9. It supports hard-tipped pen calligraphy teaching video resources;
10. It is of the same brand of the interactive digital copying machine, and shall be provided with the software copyright certificate bearing the key words, "teaching" and "video resources";
11. Provide three-year maintenance and warranty service.

修改为:

**Modified as:**

- 1.人性化界面，方便进行控制、查询、播放及备课调整功能；
- 2.内置和教材同步的高清毛笔书法、硬笔书法示范讲解高清视频，视频资源均为国内知名书法家亲自书写，按照每一例字的结构、笔画、结体规律进行分类，可一键式调取任一课时内的视频资料；每个视频都配有教学音频讲解；
- 3.支持老师管理密码功能；支持任意批注功能；



4.提供三年的维护及质保服务。

1. People-oriented interface for convenient control, query, play and teaching preparation adjustments.;

2. It contains high-definition demonstrative calligraphy and hard brush calligraphy lecture videos in synchronization with the textbook; Video resources contain processes of writing by domestically renowned calligraphy masters; Video resources are sorted by the structure, stroke and forming principle of each demonstrative character; video data of any class can be called simply by pressing one butto; Each video is accompanied with audio explanations;

3. It supports the teacher to manage passwords; It supports any annotation;

4. Provide three-year maintenance and warranty service.

序号：15：书法字帖排版系统

S.N.: 15: Calligraphy copybook typesetting system

原规定：

**Original:**

1.支持不少于 500 个字，任意字体数量排版功能，随意设置字格大小，调节字格的宽、高，支持鼠标滚轮选择模板；

2.支持拼音搜索，可同时输入多字拼音，直接搜索多字；支持多字文本搜索；支持书写字体历史记录功能；

3.演示汉字笔顺功能：具备一笔一划功能，每一笔划自动按照顺序排列组成单字；动态笔划功能，每一笔以动画起笔收笔的方式，按照笔划顺序展现；具备笔划分拆功能，每一笔都占一格，书写过的笔划用彩色标识出来，整体直观展现单字笔划过程；每个字的偏旁和非偏旁部分，都是通过两种颜色区分出来；

4.可以实时同步临摹台显示；

5.支持字帖文件随意排版及混排；

6.支持电子字帖全屏显示，通过调整排版规格控制每个字的大小和位置；

7.内置篆、隶、楷、行、草五种软笔字体字帖文件，不少于 2 万字字帖库资源；

8.支持米字格、回字格、九宫格、田字格、大方格选项；

9.支持集字练习功能；支持一键排版六步教学法功能；



10.支持边看边练功能,左边是书法家视频教学,右边是学生临摹书法家字帖功能;

11.支持字体使用的历史记录功能;

12.支持老师自定义适合自己教学的排版模板功能;

13.支持一字多体排版功能;

14.支持硬笔字体排版,方便学生临摹;

15.与交互式数字临摹台同一品牌,须提供包含有“字帖排版”关键字的软件著作权证书;

16. 提供三年的维护及质保服务。

1. It supports typesetting any number not less than 500 characters, with optional character grid sizes and adjustable grid width and height; it also supports template selection by using the mouse wheel;

2. It supports search by pinyin and allows entering pinyin of multiple characters at a time to search by the characters; it also supports search by a multiple-character text, as well as historical records on writing fonts;

3. Demonstrative writing in order of strokes: The stroke-by-stroke function arranges all strokes automatically in order to form a single character. The dynamic stroke-writing function dynamically demonstrates the writing process of a character in order of its strokes. The stroke breakdown function shows stroke breakdown of a character in different grids; namely, each additional stroke requires occupancy of one grid, and written strokes are identified by color to vividly exhibit the order of strokes for writing a single character. The radical and non-radical parts of each character are identified by using different colors;

4. It can realize synchronous real-time display on copying machines;

5. It supports casual and mixed typesetting of copybook files;

6. It supports full-screen display of electronic copybooks, and the size and position of each character can be controlled by adjustment of the typesetting specification;

7. It contains copybook files of five writing-brush font types (seal script, official script, regular script, running script, cursive script) and no fewer than copybook library resources of 20,000 characters;



8. It supports cross-diagonal grid, small-in-large-square grid, nine-square grid, cross grid and blank-square grid options;
9. It supports calligraphic works collection for exercise and six-step teaching with one button;
10. It supports the watch-and-practice function, with a calligrapher's teaching video on the left side and an exercise copybook for the student on the right side;
11. It supports historical records of used fonts;
12. It supports the teacher to define a typesetting template appropriate to his/her teaching;
13. It supports typesetting of a character in more than one fonts;
14. It supports font typesetting of hard-tipped pen writings for copying by students;
15. It is of the same brand of the interactive digital copying machine, and shall be provided with the software copyright certificate bearing the key words, " calligraphy copybook" and "typesetting";
16. Provide three-year maintenance and warranty service.

修改为:

**Modified as:**

- 1.支持不少于 500 个字，任意字体数量排版功能，可随意设置字格大小，调节字格的宽、高；支持米字格、回字格、九宫格、田字格、大方格选项；支持字帖文件随意排版及混排；支持一字多体排版功能；支持硬笔字体排版；支持电子字帖全屏显示，通过调整排版规格控制每个字的大小和位置；支持拼音搜索，演示汉字笔顺功能；支持集字练习功能；支持一键排版六步教学法功能；做到边看边练；
- 2.内置篆、隶、楷、行、草五种软笔字体字帖文件，不少于 2 万字字帖库资源；
- 3.提供三年的维护及质保服务。

1. It supports typesetting any number not less than 500 characters, with optional character grid sizes and adjustable grid width and height; It supports cross-diagonal grid, small-in-large-square grid, nine-square grid, cross grid and blank-square grid options; It supports casual and mixed typesetting of copybook files; It supports



typesetting of a character in more than one fonts; . It supports font typesetting of hard-tipped pen writings; It supports full-screen display of electronic copybooks, and the size and position of each character can be controlled by adjustment of the typesetting specification; It supports search by pinyin and demonstrative writing in order of strokes. It supports calligraphic works collection for exercise and six-step teaching with one button; It supports the watch-and-practice function.

2. It contains copybook files of five writing-brush font types (seal script, official script, regular script, running script, cursive script) and no fewer than copybook library resources of 20,000 characters;

3. Provide three-year maintenance and warranty service.

**序号：16：书法课程讲义系统**

**S.N.: 16: Calligraphy handout system**

**原规定：**

**Original:**

1.系统全部课程不少于 800 课时；

2.包含但不限于颜体 1、颜体 2、欧、柳、赵 5 套基本课程，每套课程各不少于 100 课时，均是独立的软件模块，支持查看示范字的书写要点讲解，书写示范视频讲解，单钩、双钩、笔法、示意图，核心示范字的文字演变，每课时都有书法知识点讲解；

3.碑帖深度学习模块：支持在碑帖图片中点击任意单字，出现该字的基本信息、行笔路线、笔顺视图、笔势视图、单钩视图、双钩视图、碑帖原图、碑帖修复图、碑帖修复提取图、书体对比、换字、修改颜色、修改底格、练习、六步教学法等功能，支持查看碑帖修复后的整图（提供软件功能截图）；满足上述功能的碑帖包括但不限于《九成宫碑》、《多宝塔碑》、《玄秘塔碑》、《颜勤礼碑》、《三门记》、《曹全碑》、《兰亭序》等；

4.相匹配的课程，均是独立的软件模块，支持查看示范字的书写要点讲解，书写示范视频讲解，单钩、双钩、笔法、示意图，核心示范字的文字演变，每课时都有书法知识点讲解；



- 5.包括本次采购的配套书籍的课程讲义≥1 套；
6. 颜欧柳赵及教育部教材的配套讲义中，支持课程临摹练习界面可一键统一变换字体、字格，可变换需要练习的字帖；
7. 颜欧柳赵及教育部教材的配套讲义中，支持所有示范字可一键变换字体、字格，可变换需要讲解的字帖；
8. 颜欧柳赵及教育部教材的配套讲义中，每个课时均具有通过拼字游戏进行书法结构练习：教师一键推送拼字游戏到学生端临摹台，学生临摹台变为手指触控操作，拖动被拆分的字体笔画，在米字格中进行拼字，拼字完成可显示原帖，系统可自动打分和排名，支持多次重复拼字学习；
- 9.与交互式数字临摹台同一品牌，须提供包含有“书法”“课程”关键字的软件著作权证书；
- 10.提供三年的维护及质保服务。

1. The system contains no less than 800 class hours of the course;
2. It contains but not limited to five collections of basic calligraphy courses, including Yan Style 1, Yan Style 2, Ou Style, Liu Style and Zhao Style; each collection contains not less than 100 class hours in an independent software module. The system supports viewing key writing point explanation of demonstrative characters, demonstrative writing videos, single hook/double hooks/writing style diagrams and evolution of core demonstrative characters; in each class hour, there are explained knowledge points in calligraphy;
3. Stone rubbing in-depth learning module: When any single character in a stone rubbing image is tapped, basic information, writing trajectory, order of strokes view, gesture view, single hook view, double-hook view, stone rubbing original image, stone rubbing restoration image, stone rubbing restoration image extraction, script comparison, character change, color change, background grid change, exercise and six-step teaching method will appear; whole images of restored stone rubbings can be viewed. (software function snapshots are provided). The above functions apply to stone rubbings including but not limited to Jiucheng Palace Stele, Duobao Pagoda Stele,



Xuanmi Pagoda Stele, Yan Qinli Stele, Three Gates Records, Cao Quan Stele, Preface to the Poems Collected from the Orchid Pavilion, etc.;

4. The matching courses that are an independent software module. The system supports viewing key writing point explanation of demonstrative characters, demonstrative writing videos, single hook/double hooks/writing style diagrams and evolution of core demonstrative characters; in each class hour, there are explained knowledge points in calligraphy;

5. More than one set of handouts is included for the book purchased;

6. In the basic calligraphy courses of Yan, Ou, Liu and Zhao styles and handouts for textbooks designated by the Ministry of Education, the font and writing grid on the copying exercise interface can be changed with one button; when necessary, the copybook for exercise can also be changed;

7. In the basic calligraphy courses of Yan, Ou, Liu and Zhao styles and handouts for textbooks designated by the Ministry of Education, the font and writing grid for all demonstrative characters can be changed with one button; when necessary, the copybook to be explained can also be changed;

8. In the basic calligraphy courses of Yan, Ou, Liu and Zhao styles and handouts for textbooks designated by the Ministry of Education, each class hour contains character formation games for practicing the writing structure: The teacher pushes a character formation game to the student's side copying machines, where the students can drag split strokes of a character by touch control into a cross-diagonal grid to form a character; when the game is over, the original copybook will show; the system can automatically score and rank work of students, allowing repeated practice;

9. It is of the same brand of the interactive digital copying machine, and shall be provided with the software copyright certificate bearing the key words, "calligraphy" and "course".

10. Provide three-year maintenance and warranty service.

修改为:

**Modified as:**



- 1.系统全部课程不少于 800 课时；
- 2.包含但不限于颜体 1、颜体 2、欧、柳、赵 5 套基本课程，每套课程各不少于 100 课时，均是独立的软件模块；
- 3.包含碑帖深度学习模块；
- 4.包括本次采购的配套书籍的课程讲义≥1 套；
5. 颜欧柳赵及教育部教材的配套讲义中，支持课程临摹练习界面、所有示范字可一键统一变换字体、字格，可变换需要练习的字帖；
- 6.提供三年的维护及质保服务。

1. The system contains no less than 800 class hours of the course;
2. It contains but not limited to five collections of basic calligraphy courses, including Yan Style 1, Yan Style 2, Ou Style, Liu Style and Zhao Style; each collection contains not less than 100 class hours in an independent software module.
3. Stone rubbing in-depth learning module
4. More than one set of handouts is included for the book purchased;
5. In the basic calligraphy courses of Yan, Ou, Liu and Zhao styles and handouts for textbooks designated by the Ministry of Education, the font and writing grid on the copying exercise interface can be changed with one button; when necessary, the copybook for exercise can also be changed;
6. Provide three-year maintenance and warranty service.

序号：17：硬笔书法教学系统

**S.N.: 17: Hard-tipped pen calligraphy teaching system:**

原规定：

**Original:**

- 1.系统配套课程大于等于 11 种类型，共包含不少于 200 课时，其中包含：基本笔画、复合笔画、结构原则（包含 4 类）、字头类、字底类、左偏旁类、右偏旁类、字框类、合体字结构原则、合体字结构类型、硬笔行书；
- 2.每个课时包含讲解课程、核心要领以及口诀，涉及单字需要的配有专家视频、不同书体对比、细致分析；



3.课程讲义含有相应文字的从甲骨文-篆书-隶书-楷书等文字的演变以及文字的说文解字，图文并茂，一字一故事等；

4.训练学生的观察能力，通过对比学习法让学生观察书写要点；

5.提供三年的维护及质保服务。

1. The system contains no less than 200 class hours of more than 11 course types. Including: basic strokes, compound strokes, setup principle (including 4 types), top radicals, bottom radicals, left radicals, right radicals, frames, combined character setup principles, combined character setup types, hard-tipped pen running script;

2. Each class hour contains explanation, essentials and instructions; when single characters are involved, expert videos, script comparison and detailed analysis are provided;

3. Handouts contain the evolvement of corresponding characters from inscription on bones, seal script, official script to regular script, as well as graphic and textual composition explanation of the characters, one character one story, and so on;

4. It is also designed to train students' observation ability by requiring students to compare and observe key points of writing.

5. Provide three-year maintenance and warranty service.

**修改为：**

**Modified as:**

1.系统配套课程大于等于 11 种类型，共包含不少于 200 课时；每个课时包含讲解课程、核心要领以及口诀，涉及单字需要的配有专家视频、不同书体对比、细致分析；

2.课程讲义含有相应文字的从甲骨文-篆书-隶书-楷书等文字的演变以及文字的说文解字，图文并茂，一字一故事等；

3.提供三年的维护及质保服务。

1. The system contains no less than 200 class hours of more than 11 course types. Each class hour contains explanation, essentials and instructions; when single characters are involved, expert videos, script comparison and detailed analysis are provided;

2. Handouts contain the evolvement of corresponding characters from inscription on



bones, seal script, official script to regular script, as well as graphic and textual composition explanation of the characters, one character one story, and so on;

3. Provide three-year maintenance and warranty service.

序号：18：三笔字板书示范书写软件

**S.N.: 18: Demonstrative writing software for writing with pen, writing brush and chalk**

原规定：

**Original**

- 1.软件支持选用白板、黑板、宣纸和画布四种模式作为背景底纹；
- 2.软件支持米字格、田字格、田回格、九宫格、方格和无格作为写字用底格；
- 3.软件排版支持从一字格到十五字格共十种不同排版方式；
- 4.笔型：支持毛笔、铅笔、钢笔、粉笔、刀笔、水彩笔、艺术笔 1、艺术笔 2、艺术笔 3、艺术笔 4、标注、橡皮等书写功能；
- 5.软件支持标注和具有橡皮擦功能；
- 6.支持笔锋粗细、浓度、锐利可调控；
- 7.支持色板，颜色可自由设置，≥1600 万色；
- 8.具有全屏显示功能；
- 9.支持在字体排版软件界面、视频资源库软件界面、视频直播软件界面、碑帖查询软件界面、课程讲义软件界面进行批注、点评功能；
- 10.支持一键清屏功能；
- 11.与交互式数字临摹台同一品牌；
- 12.提供三年的维护及质保服务。

1. The software supports writing with whiteboard, blackboard, Xuan paper and canvas as the background;
2. The software supports use of cross-diagonal grids, cross grids, cross-square grids, nine-square grids, blank-square grids and blank sheet as the writing grids;
3. The software supports ten typesetting forms with one to fifteen character grids;



4. Types of writing tools: The software supports writing tools including writing brush, pencil, pen, chalk, knife, water-color brush, art pen 1, art pen 2, art pen 3, art pen 4, marking and eraser, etc.;
5. The software supports marking and eraser functions;
6. It supports regulation of stroke fineness, concentration and sharpness;
7. It supports color palette, through which  $\geq 16$  million colors can be set;
8. It supports full-screen display;
9. It supports annotation and comment on the font typesetting software interface, the video resource library software interface, the live streaming video software interface, the stone rubbing query software interface and the handout software interface;
10. It supports clearing all by using one button.
11. It is of the same brand of the interactive digital copying machine
12. Provide three-year maintenance and warranty service.

修改为:

**Modified as:**

1. 软件支持选用白板、黑板、宣纸和画布四种模式作为背景底纹;
2. 软件支持米字格、田字格、田回格、九宫格、方格和无格作为写字用底格; 支持从一字格到十五字格共十种不同排版方式; 支持毛笔、铅笔、钢笔、粉笔、刀笔、水彩笔、艺术笔 1、艺术笔 2、艺术笔 3、艺术笔 4、标注、橡皮等书写功能; 支持一键清屏功能;
3. 支持色板, 颜色可自由设置,  $\geq 1600$  万色;
4. 支持在字体排版软件界面、视频资源库软件界面、视频直播软件界面、碑帖查询软件界面、课程讲义软件界面进行批注、点评功能;
5. 提供三年的维护及质保服务。

1. The software supports writing with whiteboard, blackboard, Xuan paper and canvas as the background;
2. The software supports use of cross-diagonal grids, cross grids, cross-square grids, nine-square grids, blank-square grids and blank sheet as the writing grids; it supports ten typesetting forms with one to fifteen character grids; The software supports writing



tools including writing brush, pencil, pen, chalk, knife, water-color brush, art pen 1, art pen 2, art pen 3, art pen 4, marking and eraser, etc.; It supports clearing all by using one button.

3. It supports color palette, through which  $\geq 16$  million colors can be set;
4. It supports annotation and comment on the font typesetting software interface, the video resource library software interface, the live streaming video software interface, the stone rubbing query software interface and the handout software interface;
5. Provide three-year maintenance and warranty service.

序号：19：书法智能组卷考试系统

S.N.: 19: Intelligent calligraphy test paper composition and test system

原规定：

**Original:**

- 1.支持教师智能组卷考试功能：教师通过选择题型、数量等条件进行智能组卷；支持教师手动、自动两种模式出考试卷功能，设置试卷总分，设置考试试卷说明内容，设置题目类型，设置细分题库，支持单选题、多选题、填空题等综合组卷；
- 2.支持学生在临摹台通过手指触控的方式进行答题的功能；
- 3.支持每种题目类型不少于3种细分题库；
- 4.支持单选题、多选题、填空题等题目类型；
- 5.支持教师自己设置和增加题库的考题内容，考题支持考题题目或者答案通过图片展示；
- 6.支持考试试卷的综合管理功能，可以管理试卷名称、试卷类型、试卷状态、试卷总分、试卷说明、创建时间等；
- 7.支持学生端考试卷面计时功能；
- 8.可按照书法内容分为多种题目类型，包括书法史、书法家、书法体等；
- 9.支持现场试卷自动阅卷功能；
- 10.支持学生全年考试成绩录查看功能；
- 11.支持教师智能分析学生对题库知识点掌握的百分比；
- 12.与交互式数字临摹台同一品牌；
- 13.提供三年的维护及质保服务。



1. Intelligent calligraphy test paper composition is supported: The teacher can compose a test paper by selecting question types, quantities and other conditions; It allows the teacher to make out a test paper manually or automatically, set the total score of the test paper, provide instructions to the test paper content, set the question types and subdivisional question banks, and generate a test paper with multiple-choice and gap filling questions, etc.;
2. Students can answer questions on respective copying machines by touch control;
3. Each type of questions may have no fewer than 3 subdivisional question banks;
4. Multiple-choice and gap filling questions are supported;
5. The teacher can set and add questions in the question bank; questions or answers can be displayed in the form of pictures;
6. Test papers can be generally managed by title, type, status, total score, instructions and creation date, etc.;
7. It supports timing on the student's side test paper;
8. Questions can be classified into multiple types according to the calligraphic content, including calligraphy history, calligrapher, calligraphic style, and so on;
9. On-site automatic test paper scoring is supported;
10. It supports entering and viewing students' test results throughout the year;
11. It allows the teacher to intelligently analyze the percentage of students who have learned knowledge tested by the questions;
12. It is of the same brand of the interactive digital copying machine
13. Provide three years of warranty.

修改为:

**Modified as:**

- 1.支持教师智能组卷考试功能；支持学生在临摹台通过手指触控的方式进行答题的功能；支持考试试卷的综合管理功能；支持学生端考试卷面计时功能；支持现场试卷自动阅卷功能；支持每种题目类型不少于3种细分题库；支持单选题、多选题、填空题等题目类型；支持教师自己设置和增加题库的考题内容，考题支持



考题题目或者答案通过图片展示；支持学生全年考试成绩录查看功能；支持教师智能分析学生对题库知识点掌握的百分比；

2.与交互式数字临摹台兼容；

3.提供三年的维护及质保服务。

1. Intelligent calligraphy test paper composition is supported; students can answer questions on respective copying machines by touch control; test papers can be generally managed; It supports timing on the student's side test paper; On-site automatic test paper scoring is supported; Each type of questions may have no fewer than 3 subdivisional question banks; Multiple-choice and gap filling questions are supported; The teacher can set and add questions in the question bank; questions or answers can be displayed in the form of pictures; It supports entering and viewing students' test results throughout the year; It allows the teacher to intelligently analyze the percentage of students who have learned knowledge tested by the questions;

2. Compatible with the interactive digital copying machine

3. Provide three-year maintenance and warranty service.



序号 33-54, 序号 56, 序号 76, 序号 78-79, 涉及智能财务教学实训平台、财务共享实训软件平台、财务管控综合实训平台、财务机器人软件、财务机器人课程教学平台、会计大数据实训软件平台, 财务管理(理财之道)实训平台, 大数据审计实训课程(含数据学习平台)系统, 智能审计平台以上软件中, 原规定: “提供软件著作权证书复印件或扫描件, 所有复印件或扫描件均需加盖原厂商公章。”

**S.N.: 33-54 , S.N.:56 , S.N.:76 , S.N.:78-79, Intelligent finance teaching and practical training platform, Software platform for practical training on financial sharing, Financial control and practical training platform, Financial robot software, Course teaching platform for the financial robot, Course teaching platform for the financial robo, Big data software platform for practical accounting training, Financial management (Financing method) training platform, Big data audit training course (including data learning platform) system, and intelligent audit platform all require: Provide a copy or scanning copy of the software copyright certificate. All the copies or scanned copies shall be affixed with the official seal of the original manufacturer**

修改为:

**Modified as:**

已删除相关“提供软件著作权证书复印件或扫描件, 所有复印件或扫描件均需加盖原厂商公章。”条款。

Delete the clause “Provide a copy or scanning copy of the software copyright certificate. All the copies or scanned copies shall be affixed with the official seal of the original manufacturer”

原规定:

**Original**

序号 83: “1.1 教学管理系统后台主页面支持选择班级查看对应班级的实训任务与课程题库完成情况, 可通过柱状图与饼状图等图形的可视化形式直观展现已完成实训任务与课程题库的人数与占比。”



S.N.: 83“ 1.1 Home page of teaching management system background: Select the class to view the completion of the training task and course question bank of the corresponding class, and visually show the number and proportion of the completed training task and course question bank by histogram and pie chart and other charts.”

修改为:

**Modified as:**

“\*1.1 教学管理系统后台主页面支持选择班级查看对应班级的实训任务与课程题库完成情况,可通过柱状图与饼状图等图形的可视化形式直观展现已完成实训任务与课程题库的人数与占比。”

“\* 1.1 Home page of teaching management system background: Select the class to view the completion of the training task and course question bank of the corresponding class, and visually show the number and proportion of the completed training task and course question bank by histogram and pie chart and other charts.”

原规定:

**Original:**

序号 83: “1.5 教学监控: 可通过班级或学生姓名筛选、查询用户, 查看班级、学号等信息, 系统支持批量导出用户信息。教师可查看学生每个实训任务的完成详情, 支持自动评分和人工评分。”

S.N.: 83 “1.5 Teaching monitoring: Filter and query users by class or student name, and view information such as class, student ID, name, points, completed tasks, total tasks, completed exercises, total exercises, and answer times. The system supports batch export of user information. Teachers can view the completion details of each training task of students, and support automatic grading and manual grading.”

修改为:

**Modified as:**

“\*1.5 教学监控: 可通过班级或学生姓名筛选、查询用户, 查看班级、学号等信息, 系统支持批量导出用户信息。教师可查看学生每个实训任务的完成详情, 支持自动评分和人工评分。”

“\*1.5 Teaching monitoring: Filter and query users by class or student name, and view



information such as class, student ID, name, points, completed tasks, total tasks, completed exercises, total exercises, and answer times. The system supports batch export of user information. Teachers can view the completion details of each training task of students, and support automatic grading and manual grading.”

原规定:

**Original:**

序号 83: “1.6 交流中心: 应具备管理帖子与回复的功能模块, 管理员可添加帖子, 或对帖子进行删除、审核等操作”

S.N.: 83 : “1.6 Exchange center:It shall have management management. The function module of managing posts and replying. Administrators can add posts, or delete and approve posts”

修改为:

**Modified as:**

“\*1.6 交流中心: 应具备管理帖子与回复的功能模块, 管理员可添加帖子, 或对帖子进行删除、审核等操作”

“\*1.6 Exchange center:It shall have management management. The function module of managing posts and replying. Administrators can add posts, or delete and approve posts”

原规定:

**Original:**

序号 83: 原参数中没有 1.8。

S.N.: 83 : There is no 1.8 in the original.

修改(新增)为:

Modified (add)as:

“\*1.8 课程列表: 可通过课程名称查询课程类型、课程明细、封面图片、创建人、所属学校、添加时间等信息, 管理员可选择对课程信息进行修改。系统支持添加新的课程信息并创建课程, 并在课程明细中对课程明细信息进行管理。”

“\* 1.8 Course List: Information such as course type, course details, cover image,



creator, school, and addition time can be queried by course name. Administrators can choose to modify course information. The system supports adding new course information and creating courses, and managing course details in the course details”

原规定:

**Original:**

序号 83: “2.1 教学管理系统前台主页面: 支持链接至实训任务、实训平台、课程题库等功能模块。展示用户实训学习与答题完成情况, 包括完成任务数、答题次数、积分、排名信息等情况。”

S.N.: 83 : “2.1 Main page of front desk of teaching management system: It support functional modules such as training task, training platform, course question bank. Display the completion of users' practical learning and answering, including the number of tasks completed, the number of answers, points and ranking information etc.”

修改为:

Modified as:

“\*2.1 教学管理系统前台主页面: 支持链接至实训任务、实训平台、课程题库等功能模块。展示用户实训学习与答题完成情况, 包括完成任务数、答题次数、积分、排名信息等情况。”

“\*2.1 Main page of front desk of teaching management system: It supports functional modules such as training task, training platform, course question bank. Display the completion of users' practical learning and answering, including the number of tasks completed, the number of answers, points and ranking information etc.”

原规定:

**Original:**

序号 83: “2.5 课程题库: 可分组展示课程试题组, 显示试题组满分、作答次数等信息。通过链接可进入试题组进行做题, 试题形式包括单选题、多选题、判断题等题型, 完成答题后显示考试结果, 提供答题得分、错题数量、正确答案与学生答案等信息。”

S.N.: 83 : “2.5 Course question bank: Display the course test groups in groups,



showing the full marks of the test groups, the number of answers and other information. Enter the test group in the link to do the test. The test forms include single-choice questions, multiple-choice questions and true-false questions. After the answer is completed, the test results will be displayed, and information such as the answer score, the number of wrong questions, the correct answers and the students' answers will be provided. ”

**修改为:**

**Modified as:**

“\*2.5 课程题库：可分组展示课程试题组，显示试题组满分、作答次数等信息。通过链接可进入试题组进行做题，试题形式包括单选题、多选题、判断题等题型，完成答题后显示考试结果，提供答题得分、错题数量、正确答案与学生答案等信息。”

“\*2.5 Course question bank: Display the course test groups in groups, showing the full marks of the test groups, the number of answers and other information. Enter the test group in the link to do the test. The test forms include single-choice questions, multiple-choice questions and true-false questions. After the answer is completed, the test results will be displayed, and information such as the answer score, the number of wrong questions, the correct answers and the students' answers will be provided. ”

**原规定:**

**Original:**

序号 83，（三）实训系统功能模块：“4.产品管理模块包括但不限于通过产品名称或 ID 搜索指定产品，显示产品组、售价、库存、运费模板等信息。”

**S.N.: 83 : (III) Training system function module** “4. The product management module includes, but is not limited to, searching for a specific product by product name or ID, and displaying product group, sales price, inventory, freight template and other information. ”



修改为:

**Modified as:**

“\*4.产品管理模块包括但不限于通过产品名称或 ID 搜索指定产品，显示产品组、售价、库存、运费模板等信息。”

“\*4. The product management module includes, but is not limited to, searching for a specific product by product name or ID, and displaying product group, sales price, inventory, freight template and other information.”

序号 83，原规定无“（四）学习平台功能模块”

S.N.: 83 : Original did not include "( IV) Learning Platform Function Module"

修改（新增）为: Modified (add) as:

“\*1.教学与题库管理，展示的数据包括学生数量、考试数量、练习数量、试题数量等；通过折线图以可视化的形式直观展现学习活跃情况；最新资料模块展示至少 10 套资料，显示资料名称与上传日期信息；最新考试模块展示至少 10 场考试，显示考试名称与考试日期。

\*2.试卷管理。教师可对试卷进行复制组卷、取消组卷、试卷信息编辑或删除等操作；添加试卷时，教师需设置试卷名称、题目类型、题型分数等信息并添加出题策略；试卷可由题库随机取题生成试卷，可以自定义出卷策略：按题型、知识点、难度定义出题数量，由系统自动生成试卷，不满意还可以进行自动换题或手工换题。题目包括但不限于随机和固定两种模式。

\*3.考试管理。添加考试时，教师可选择全班或班内部分学生参加考试，自定义设置是否启用交卷后“显示成绩”或交卷后“查看错题”规则。考试支持设置最早开始时间，最晚结束时间以及考试时长的随到随考模式；支持考试过程中离开试卷页面的次数的计数功能和提醒考生功能；可以设置最大考试次数，学生可以针对一场考试多次进行。

\*4.考试成绩。教师可进行查看考试完成详情，客观题目支持系统自动评分，主观实训题目支持教师后台手动评分，教师可以在评分页面直接点击后自动登录该考生的实训平台，并可查看到该考生的实训平台实操情况。”



“\* 1. Teaching and question bank management, displaying data including student numbers, exam numbers, practice numbers, test questions, etc.; visualizing learning activity through line charts; displaying at least 10 sets of information in the latest information module, displaying information on data names and upload dates; and displaying at least 10 exams in the latest exam module, displaying exam names and dates.

\*2. Test paper management. Teachers can perform operations such as copying, canceling, editing, or deleting test papers; When adding a test paper, the teacher needs to set information such as the paper name, question type, question type and score, and add a question setting strategy; The test paper can be randomly selected from the question bank to generate a test paper, and the paper production strategy can be customized: define the number of questions according to the question type, knowledge point, and difficulty, and the system will automatically generate the test paper. If you are not satisfied, you can automatically or manually change the questions. The questions include but are not limited to two modes: random and fixed.

\*3. Exam management. When adding an exam, teachers can choose to have the entire class or some students in the class participate in the exam, and customize whether to enable the "Show Results" or "View Mistakes" rules after paper submission. The exam supports the setting of the earliest start time, latest end time, and exam duration in the "on arrival" mode; Support the counting function of the number of times to leave the test paper page during the exam process and the function of reminding candidates; The maximum number of exams can be set, and students can take multiple exams for a single exam.

\*4. Examination results. Teachers can view the completion details of the exam. Objective questions support automatic scoring by the system, while subjective training questions support manual scoring by the teacher's backend. Teachers can directly click on the scoring page and automatically log in to the candidate's training platform, and can view the actual operation status of the candidate's training platform”

原规定:



**Original:**

**序号 83:** “四、其他要求

1.课程资源：提供配套的完整课程体系，以及在线学习资源，包括教学大纲、视频、试题、PPT 课件等。

2.实验指导：

2.1 至少包含 10 个实训任务，包括但不限于产品管理、搭配套餐管理、模板管理、物流管理等实训项目。

2.2 实验指导资料包括但不限于实验目的、实验知识准备、实验内容与步骤、实验要求和思考题以及配套指导视频和试题库等。

3.提供保质期内每年至少 3 名的师资研修班免费名额，签发培训证书。

4.提供不少于 3 年免费软件更新服务。”

**S.N.: 83 “IV. Other requirements**

1. Course resources: Provide a complete curriculum system and online learning resources, including syllabus, videos, test questions, PPT courseware, etc.

2. Experimental guidance:

2.1 At least 10 training tasks shall be included, including but not limited to product management, package management, template management, logistics management and other training projects.

2.2 The experimental guidance materials include but are not limited to the experimental purpose, experimental knowledge preparation, experimental content and steps, experimental requirements and thinking questions, as well as supporting guidance videos and test question banks.

3. Provide free quota of at least 3 teachers for the seminar every year within the warranty period, and issue the training certificate.

4. Provide free software update service for at least 3 years.”

**修改为:**

**Modified as:**

“（五）、其他要求



1.课程资源：提供配套的完整课程体系，以及在线学习资源，包括教学大纲、视频、试题、PPT 课件等。

2.实验指导：

\*2.1 至少包含 20 个实训任务，包括但不限于产品管理、搭配套餐管理、模板管理、物流管理等实训项目。

2.2 实验指导资料包括但不限于实验目的、实验知识准备、实验内容与步骤、实验要求和思考题以及配套指导视频和试题库等。

3.提供保质期内每年至少 3 名的师资研修班免费名额，签发培训证书。

4.提供不少于 3 年免费软件更新服务。”

**“V. Other requirements**

1. Course resources: Provide a complete curriculum system and online learning resources, including syllabus, videos, test questions, PPT courseware, etc.

2. Experimental guidance:

\*2.1 At least 20 training tasks shall be included, including but not limited to product management, package management, template management, logistics management and other training projects.

2.2 The experimental guidance materials include but are not limited to the experimental purpose, experimental knowledge preparation, experimental content and steps, experimental requirements and thinking questions, as well as supporting guidance videos and test question banks.

3. Provide free quota of at least 3 teachers for the seminar every year within the warranty period, and issue the training certificate.

4. Provide free software update service for at least 3 years.”

原规定：

**Original:**

序号 89：“十、阿里巴巴国际站模拟仿真系统，（二）教学管理系统模块

1.2 教学监控：可查看积分、已完成任务数、总任务数等信息，可查看学生每个实训任务的完成详情，系统根据学生实操完成情况进行自动评分，教师也可以进



入该学生的实训后台，查看该学生的实训平台实操情况并进行人工评分。交流中心具备管理帖子与回复的功能模块，支持通过帖子置顶或审核状态对帖子进行筛选。

1.3 课程列表：可通过设置课程名称、课程描述、封面图片、是否启用和顺序等功能模块来设置实验开始和结束时间。”

**S.N.: 89: X. Alibaba international simulation system (II)Teaching management system module**

1.2 Teaching monitoring: View information such as points, completed task etc. You can also view the completion details of each training task of a student. The system can automatically score according to the completion of students' practical operation. Teachers can also enter the training background of the student, view the actual practice of the student's training platform and manually grade them. The Communication Center has a function module to manage posts and replies, and supports filtering posts by their top or review status.

1.3 Course list: You can set the start and end time of the experiment by setting the course name, course description, cover picture, whether to enable and order and other functional modules.

**修改为：**

Modified as:

“\*1.2 教学监控：可查看积分、已完成任务数、总任务数等信息，可查看学生每个实训任务的完成详情，系统根据学生实操完成情况进行自动评分，教师也可以进入该学生的实训后台，查看该学生的实训平台实操情况并进行人工评分。交流中心具备管理帖子与回复的功能模块，支持通过帖子置顶或审核状态对帖子进行筛选。

\*1.3 课程列表：可通过设置课程名称、课程描述、封面图片、是否启用和顺序等功能模块来设置实验开始和结束时间。”

“\*1.2 Teaching monitoring: View information such as points, completed task etc. You



can also view the completion details of each training task of a student. The system can automatically score according to the completion of students' practical operation. Teachers can also enter the training background of the student, view the actual practice of the student's training platform and manually grade them. The Communication Center has a function module to manage posts and replies, and supports filtering posts by their top or review status.

\*1.3 Course list: You can set the start and end time of the experiment by setting the course name, course description, cover picture, whether to enable and order and other functional modules.

”

序号 89, (三) 实训系统功能模块一:

**S.N.: 89: (III) Functional module of training system I**

原规定 :

**Original:**

“3.PC 端店铺装修: ”

“3. PC store decoration: ”

修改为: Modified as:

“\*3.PC 端店铺装修: ”

“3. PC store decoration:”

序号 89, (三) 实训系统功能模块一:

**S.N.: 89: (III) Functional module of training system I**

原规定:

**Original:**

“4.无线旺铺装修包括但不限于以下内容: ”

“4. Wireless store decoration includes but not limited to the following contents: ”

修改为: Modified as:

“\*4.无线旺铺装修包括但不限于以下内容: ”



“\*4. Wireless store decoration includes but not limited to the following contents:”

序号 89，（三）实训系统功能模块一：

**S.N.: 89: (III) Functional module of training system I**

原规定：

**Original:**

“5.产品智能编辑：”

“5 Product intelligent editing:”

修改为： Modified as:

“\*5.产品智能编辑：”

“\*5. Product intelligent editing:”

序号 89，（三）实训系统功能模块一：

**S.N.: 89: (III) Functional module of training system I**

原规定：

**Original:**

“8.数据分析包括但不限于以下内容：”

“8. Data analysis includes, but is not limited to, the following:”

修改为：

Modified as:

“\*8.数据分析包括但不限于以下内容：”

“\*8. Data analysis includes, but is not limited to, the following:”

序号 89，（四）实训系统功能模块二：

**S.N.: 89: (IV) Functional module of training system II**

原规定：

**Original:**

“4.账户管理：在账户设置中，卖家可查看商户 ID、客户经理、邮箱、收入分成



等基本信息。”

“4. Account management: In the account settings, sellers can view the basic information such as merchant ID, customer manager, user name, username, email address, and revenue sharing.”

修改为: Modified as:

“\*4.账户管理: 在账户设置中, 卖家可查看商户 ID、客户经理、邮箱、收入分成等基本信息。”

“\*4. Account management: In the account settings, sellers can view the basic information such as merchant ID, customer manager, user name, username, email address, and revenue sharing.”

序号 89, (五) 实训系统功能模块三:

**S.N.: 89: (V) Functional module of training system (III)**

原规定:

**Original:**

“2.1 国家分析主题提供国家市场分析、商品数量分析、店铺与商品分析、物流分析模块。”

“2.1 which are respectively national analysis themes, providing national market analysis, commodity quantity analysis, store and commodity analysis, and logistics analysis modules”

修改为: Modified as:

“\*2.1 国家分析主题提供国家市场分析、商品数量分析、店铺与商品分析、物流分析模块。”

“\*2.1 which are respectively national analysis themes, providing national market analysis, commodity quantity analysis, store and commodity analysis, and logistics analysis modules”

序号 89, (六) 学习平台功能模块:

**S.N.: 89: (VI) Functional module of learning platform**



原规定：

**Original:**

“1.教学与题库管理，展示包括但不限于学生数量、考试数量、练习数量、试题数量等数据；最新资料模块展示平台可以上传不少于 10 套资料，显示资料名称与上传日期信息，最新考试模块展示平台可以展示不少于 10 场考试，显示考试名称与考试日期。

2.试卷管理。教师可对试卷进行复制组卷、取消组卷、试卷信息编辑或删除等操作。题目类型包括但不限于固定题目/随机题目，其中固定题目支持手动或自动选题等模块。出题策略包括但不限于题库、题型名称、试题难度等模块，题目包括但不限于随机和固定两种模式。

3.考试成绩。教师可进行查看考试完成详情，客观题目支持系统自动评分，主观实训题目支持教师后台手动评分，教师可以在评分页面直接点击进入考生的实训平台。

5.练习管理，教师可以设置练习名称、选择试卷、选择班级等，教师可选择学生参加练习。

6.试题管理。教师可以设置包括但不限于以下几种基本题目类型：多选题、填空题、简答题、实训任务，可以选择支持上传试题附件、支持答题区域按钮的自动配置、支持试题解析的录入等。

7.提供不少于 200 道阿里巴巴等国际站实操试题以及每个实操试题对应的讲解视频，同时，提供不少于 2000 道阿里巴巴等国际站理论试题，并支持教师自由添加题目，添加方式可以是单个添加或通过 Excel 等表格模板批量导入。可查看试题分布详情，包括题型分布与难度分布。”

1. Teaching and question bank management. The display includes but not limited to the number of students, the number of exams, the number of exercises, the number of test questions, etc; the latest data module displays not less than 10 sets of data uploaded on the platform, showing the data name and upload date information; the test module displays the not less than 10 tests on the platform, showing the test name and test date.

2. Test paper management. Teachers can copy test papers, cancel test papers, edit or



delete the test paper information. The types of questions include but are not limited to fixed questions/random questions, among which fixed questions support manual or automatic topic selection modules. The question setting strategy includes but is not limited to question bank, question type name, question difficulty and other modules. The questions include but are not limited to random and fixed modes.

3. Examination results. Teachers can view the completion details of the examination. The objective questions support automatic scoring by the system, and the subjective training questions support manual scoring by teachers in the background. Teachers enter into the examinee's training platform after clicking directly on the scoring page.

5. Exercise management. Teachers can set exercise names, select test papers, and select classes. Teachers can select students in the class to participate in the exercise.

6. Test question management. Teachers can set question types including but not limited to: multiple-choice questions, completions, short answer questions and training tasks, can select to support the upload of test question attachments, the automatic configuration of answer area buttons, and the entering of analysis of test questions etc.

7. Provide at least 200 Alibaba and International Station practical test questions and the corresponding instructional videos for each practical test question, at same time as well as 2,000 Alibaba and International Station theoretical test questions during acceptance, and to support teachers to add questions freely, either individually or batch import through Excel etc. form templates. They can view the distribution details of test questions, including question type distribution and difficulty distribution.

**修改为:** Modified as:

“1.教学与题库管理，展示包括但不限于学生数量、考试数量、练习数量、试题数量等数据；最新资料模块展示平台可以上传不少于 10 套资料，显示资料名称与上传日期信息，最新考试模块展示平台可以展示不少于 10 场考试，显示考试名称与考试日期。

\*2.试卷管理。教师可对试卷进行复制组卷、取消组卷、试卷信息编辑或删除等操作。题目类型包括但不限于固定题目/随机题目，其中固定题目支持手动或自



动选题等模块。出题策略包括但不限于题库、题型名称、试题难度等模块，题目包括但不限于随机和固定两种模式。

\*3.考试成绩。教师可进行查看考试完成详情，客观题目支持系统自动评分，主观实训题目支持教师后台手动评分，教师可以在评分页面直接点击进入考生的实训平台。

4.练习管理，教师可以设置练习名称、选择试卷、选择班级等，教师可选择学生参加练习。

\*5.试题管理。教师可以设置包括但不限于以下几种基本题目类型：多选题、填空题、简答题、实训任务，可以选择支持上传试题附件、支持答题区域按钮的自动配置、支持试题解析的录入等。

6.提供不少于200道阿里巴巴等国际站实操试题以及每个实操试题对应的讲解视频，同时，提供不少于2000道阿里巴巴等国际站理论试题，并支持教师自由添加题目，添加方式可以是单个添加或通过Excel等表格模板批量导入。可查看试题分布详情，包括题型分布与难度分布。”

1. Teaching and question bank management. The display includes but not limited to the number of students, the number of exams, the number of exercises, the number of test questions, etc; the latest data module displays not less than 10 sets of data uploaded on the platform, showing the data name and upload date information; the test module displays the not less than 10 tests on the platform, showing the test name and test date.

\*2. Test paper management. Teachers can copy test papers, cancel test papers, edit or delete the test paper information. The types of questions include but are not limited to fixed questions/random questions, among which fixed questions support manual or automatic topic selection modules. The question setting strategy includes but is not limited to question bank, question type name, question difficulty and other modules. The questions include but are not limited to random and fixed modes.

\*3. Examination results. Teachers can view the completion details of the examination. The objective questions support automatic scoring by the system, and the subjective training questions support manual scoring by teachers in the background. Teachers



enter into the examinee's training platform after clicking directly on the scoring page.

4. Exercise management. Teachers can set exercise names, select test papers, and select classes. Teachers can select students in the class to participate in the exercise.

\*5. Test question management. Teachers can set question types including but not limited to: multiple-choice questions, completions, short answer questions and training tasks, can select to support the upload of test question attachments, the automatic configuration of answer area buttons, and the entering of analysis of test questions etc.

6. Provide at least 200 Alibaba and International Station practical test questions and the corresponding instructional videos for each practical test question, at same time as well as 2,000 Alibaba and International Station theoretical test questions during acceptance, and to support teachers to add questions freely, either individually or batch import through Excel etc. form templates. They can view the distribution details of test questions, including question type distribution and difficulty distribution.

序号 89, (七) 后台管理系统模块,

**S.N.: 89: (VII) Background management system module**

原规定:

**Original:**

“1.后台管理系统包括但不限于首页、RFQ 管理、客户管理等部分。后台管理系统首页提供总店铺数量、总商品数量、七日店铺注册统计等功能,店铺列表支持查看系统中的店铺信息,客户管理支持内置客户的新增、编辑和删除操作,公海客户可手工新增,可以根据填写的客户数量随机生成。”

“1. The background management system should include but not limited to the home page, RFQ management, customer management, etc. The home page of the background management system provides functions such as the total number of stores, the total commodity quantity, and the seven day store registration statistics. Store list supports viewing the store information in the system. Customer management supports adding, editing, and deleting built-in customers; high seas customers can be added



manually or generated randomly according to the number of customers filled in.”

修改为：

Modified as:

“\*1.后台管理系统包括但不限于首页、RFQ管理、客户管理等部分。后台管理系统首页提供总店铺数量、总商品数量、七日店铺注册统计等功能，店铺列表支持查看系统中的店铺信息，客户管理支持内置客户的新增、编辑和删除操作，公海客户可手工新增，可以根据填写的客户数量随机生成。”

“\*1. The background management system should include but not limited to the home page, RFQ management, customer management, etc. The home page of the background management system provides functions such as the total number of stores, the total commodity quantity, and the seven day store registration statistics. Store list supports viewing the store information in the system. Customer management supports adding, editing, and deleting built-in customers; high seas customers can be added manually or generated randomly according to the number of customers filled in.”

序号 91，十二、跨境亚马逊模拟实训平台，（二）教学管理系统模块

**S.N.: 91: XII. Cross-border Amazon simulation training platform: (II) Teaching management system module**

原规定：

**Original:**

“1.5 教学监控：可通过班级或学生姓名筛选、查询用户，支持批量导出用户信息。教师可查看学生每个实训任务的完成详情，支持自动评分和人工评分。”

1.5 Teaching monitoring: Filter and query users by class or student name. The system supports batch export of user information. Teachers can view the completion details of each training task of students, and support automatic grading and manual grading.

修改为（其中\*1.6 为新增）： Modified as（\* 1.6 is a new addition）：

“\*1.5 教学监控：可通过班级或学生姓名筛选、查询用户，支持批量导出用户信息。教师可查看学生每个实训任务的完成详情，支持自动评分和人工评分。



\*1.6 课程列表：可通过课程名称查询课程类型、课程明细、封面图片、创建人、所属学校、添加时间等信息，管理员可选择对课程信息进行修改。系统支持添加新的课程信息并创建课程，并在课程明细中对课程明细信息进行管理。”

“\*1.5 Teaching monitoring: Filter and query users by class or student name. The system supports batch export of user information. Teachers can view the completion details of each training task of students, and support automatic grading and manual grading.

\*1.6 Course List: Information such as course type, course details, cover image, creator, school, and addition time can be queried by course name. Administrators can choose to modify course information. The system supports adding new course information and creating courses, and managing course details in the course details.”

序号 91，十二、跨境亚马逊模拟实训平台，（二）教学管理系统模块

**S.N.: 91: XII. Cross-border Amazon simulation training platform: (II) Teaching management system module**

原规定：

**Original:**

“2.1 教学管理系统前台主页面：支持链接至实训任务、实训平台、课程题库等功能模块。

2.2 实训任务：可以展示包括但不限于实训积分、任务完成进度、已完成任务数量、未完成任务数量、班级排名等任务。

2.3 课程题库：可分组展示课程试题组，显示试题组满分、作答次数等信息。通过链接可进入试题组进行做题，试题形式包括但不限于单选题、多选题、判断题等题型，完成答题后显示考试结果，提供答题得分、错题数量、正确答案与学生答案等信息。”

“2.1 Front page of teaching management system: It support links to training tasks, training platform, course question bank and other functional modules.

2.2 Training tasks: The displayed information includes but not limited to training points, task completion progress, number of completed tasks, number of unfinished tasks and class ranking and other tasks.



2.3 Course question bank: Display the course test groups in groups, showing the full marks of the test groups, the number of answers and other information. Enter the test group in the link to do the test. The test forms include but not limited to single-choice questions, multiple-choice questions and true-false questions etc. After the answer is completed, the test results will be displayed, and information such as the answer score, the number of wrong questions, the correct answers and the students' answers will be provided.”

修改为:

**Modified as:**

“\*2.1 教学管理系统前台主页面：支持链接至实训任务、实训平台、课程题库等功能模块。

2.2 实训任务：可以展示包括但不限于实训积分、任务完成进度、已完成任务数量、未完成任务数量、班级排名等任务。

\*2.3 课程题库：可分组展示课程试题组，显示试题组满分、作答次数等信息。通过链接可进入试题组进行做题，试题形式包括但不限于单选题、多选题、判断题等题型，完成答题后显示考试结果，提供答题得分、错题数量、正确答案与学生答案等信息。”

“\*2.1 Front page of teaching management system: It support links to training tasks, training platform, course question bank and other functional modules.

2.2 Training tasks: The displayed information includes but not limited to training points, task completion progress, number of completed tasks, number of unfinished tasks and class ranking and other tasks.

\*2.3 Course question bank: Display the course test groups in groups, showing the full marks of the test groups, the number of answers and other information. Enter the test group in the link to do the test. The test forms include but not limited to single-choice questions, multiple-choice questions and true-false questions etc. After the answer is completed, the test results will be displayed, and information such as the answer score, the number of wrong questions, the correct answers and the students' answers will be provided.”



序号 91, (三) 实训系统功能模块

**S.N.: 91: (III) Training system function module**

原规定:

**Original:**

“1.账号注册与开通店铺: 实训平台可以仿真亚马逊卖家和买家的注册流程。在开通店铺的过程中, 可以完成卖家账号注册、完善企业资讯、完善卖家信息等流程。

2.卖家后台功能模块包括但不限于目录、库存、订单、广告等模块。

3.平台仿真亚马逊 API 开放接口, 支持外部 ERP 等工具进行对接, 可以通过在线网页的方式浏览接口的名称和参数及其相关描述, 且提供的 API 开放接口至少包含产品相关接口和订单相关接口两大类。

4.亚马逊 API 开放订单相关接口, 包括但不限于以下订单: 返回所有亚马逊订单数据、查询指定时间范围内的订单数据、查询指定的单个订单、根据您的 Amazonian 返回订单商品等。”

“1. Account registration and store opening: The training platform can simulate the registration process of Amazon sellers and buyers respectively. In the process of opening a store, the seller account registration, enterprise information completion, seller’s information completion etc. can be completed.

2. Seller's background function module: It should include but not limited to modules such as catalog, inventory, order, advertising.

3. The platform emulates the Amazon API open interface, supports external ERP and other tools for docking, and can browse the names, parameters and related descriptions of the interface through online web pages. The API open interfaces provided at least include product related interfaces and order related interfaces.

4. Amazon API opens order related interfaces, including but not limited to the following orders: return all Amazon order data, query order data within a specified time range, query a specified single order, and return order goods according to your



specified Amazonian.”

修改为:

**Modified as:**

“\*1.账号注册与开通店铺：实训平台可以仿真亚马逊卖家和买家的注册流程。在开通店铺的过程中，可以完成卖家账号注册、完善企业资讯、完善卖家信息等流程。

2.卖家后台功能模块包括但不限于目录、库存、订单、广告等模块。

\*3.平台仿真亚马逊 API 开放接口，支持外部 ERP 等工具进行对接，可以通过在线网页的方式浏览接口的名称和参数及其相关描述，且提供的 API 开放接口至少包含产品相关接口和订单相关接口两大类。

\*4.亚马逊 API 开放订单相关接口，包括但不限于以下订单：返回所有亚马逊订单数据、查询指定时间范围内的订单数据、查询指定的单个订单、根据您指定的 Amazonian 返回订单商品等。”

“\*1. Account registration and store opening: The training platform can simulate the registration process of Amazon sellers and buyers respectively. In the process of opening a store, the seller account registration, enterprise information completion, seller’s information completion etc. can be completed.

2. Seller's background function module: It should include but not limited to modules such as catalog, inventory, order, advertising.

\*3. The platform emulates the Amazon API open interface, supports external ERP and other tools for docking, and can browse the names, parameters and related descriptions of the interface through online web pages. The API open interfaces provided at least include product related interfaces and order related interfaces.

\*4. Amazon API opens order related interfaces, including but not limited to the following orders: return all Amazon order data, query order data within a specified time range, query a specified single order, and return order goods according to your specified Amazonian.”

序号 91，（四）其他要求:

**S.N.: 91: (IV) Other requirements**



原规定:

**Original:**

“1.课程资源: 提供配套的完整课程体系, 以及在线学习资源, 包括但不限于教学大纲、视频、试题、PPT 课件等资源;

2.实验指导: 提供完整的配套实验教程, 提供不少于 15 个实训任务, 且每个实训任务有对应的实验指导资料, 包括但不限于实验目的、实验知识准备、实验内容与步骤、实验要求和思考题等内容。”

1. Course resources: Provide a complete curriculum system and online learning resources, including but not limited to syllabus, videos, test questions, PPT courseware, etc.;

2. Experimental guidance: It provides a complete set of supporting experimental courses, including at least 15 training tasks, and each training task has corresponding experimental guidance materials, including but not limited to experimental objective, experimental knowledge preparation, experiment content and steps, experimental requirements and thinking questions etc.;

修改为:

**Modified as:**

“\*1.课程资源: 提供配套的完整课程体系, 以及在线学习资源, 包括但不限于教学大纲、视频、试题、PPT 课件等资源;

\*2.实验指导: 提供完整的配套实验教程, 提供不少于 15 个实训任务, 且每个实训任务有对应的实验指导资料, 包括但不限于实验目的、实验知识准备、实验内容与步骤、实验要求和思考题等内容。”

“\*1. Course resources: Provide a complete curriculum system and online learning resources, including but not limited to syllabus, videos, test questions, PPT courseware, etc.;

\*2. Experimental guidance: It provides a complete set of supporting experimental courses, including at least 15 training tasks, and each training task has corresponding experimental guidance materials, including but not limited to experimental objective, experimental knowledge preparation, experiment content and steps, experimental



requirements and thinking questions etc.;"

序号 92，十三、wish 跨境电商模拟实训平台，（二）功能模块

**S.N.: 92: XIII. Wish cross-border e-commerce simulation training platform: (II)**

**Functional requirements**

原规定:

**Original:**

“2.售卖产品:”

“2. Sell product:”

修改为:

**Modified as:**

“\*2.售卖产品:”

“\*2. Sell product:”

序号 92，十三、wish 跨境电商模拟实训平台，（二）功能模块，

**S.N.: 92: XIII. Wish cross-border e-commerce simulation training platform: (II)**

**Functional requirements**

原规定:

**Original:**

“3.2 查看订单信息时，可通过订单 ID、交易 ID 等信息搜索指定订单，并对显示所有交易记录、显示已发货订单、显示未发货订单、Wish Express 进行筛选。”

“3.2 When viewing order information, users can search for a specific order by order ID, transaction ID, and other information, and filter the display of all transaction records, display shipped orders, display unshipped orders, and Wish Express etc.”

修改为:

**Modified as:**

“\*3.2 查看订单信息时，可通过订单 ID、交易 ID 等信息搜索指定订单，并对显示所有交易记录、显示已发货订单、显示未发货订单、Wish Express 进行筛选。”

“\*3.2 When viewing order information, users can search for a specific order by order



ID, transaction ID, and other information, and filter the display of all transaction records, display shipped orders, display unshipped orders, and Wish Express etc.”

序号 92，十三、wish 跨境电商模拟实训平台，（二）功能模块

**S.N.: 92: XIII. Wish cross-border e-commerce simulation training platform: (II)**

**Functional requirements**

原规定：

**Original:**

“4.2 待处理用户问题模块中，支持通过客户问题标签、要求退款、收到已损坏或错误的产品、退回或进行产品更换、更换配送地址、物流配送状态或预计到达时间查询等标签对显示结果进行筛选。”

“4.2 In the module of pending user problems, you can filter the displayed results through such tags as customer problem tags, asking for refunds, receiving damaged or wrong products, returning or replacing products, changing shipping addresses, logistics distribution status or estimated arrival time queries.”

修改为：

**Modified as:**

“\*4.2 待处理用户问题模块中，支持通过客户问题标签、要求退款、收到已损坏或错误的产品、退回或进行产品更换、更换配送地址、物流配送状态或预计到达时间查询等标签对显示结果进行筛选。”

“\*4.2 In the module of pending user problems, you can filter the displayed results through such tags as customer problem tags, asking for refunds, receiving damaged or wrong products, returning or replacing products, changing shipping addresses, logistics distribution status or estimated arrival time queries.”

序号 92，十三、wish 跨境电商模拟实训平台，（二）功能模块

**S.N.: 92: XIII. Wish cross-border e-commerce simulation training platform: (II)**

**Functional requirements**

原规定：



**Original:**

“11.平台应仿真 Wish 电商平台 API 接口，通过私服应用功能与外部 ERP 工具进行对接。”

“11. The platform should simulate the API interface of the Wish e-commerce platform and interface with external ERP tools by the private service application function.”

**修改为:**

**Modified as:**

“\*11.平台应仿真 Wish 电商平台 API 接口，通过私服应用功能与外部 ERP 工具进行对接。”

“\*11. The platform should simulate the API interface of the Wish e-commerce platform and interface with external ERP tools by the private service application function.”

序号 80-92，涉及国际商务综合模拟平台

S.N.: 80-92, Teaching platform of international trade integration

**原规定:**

**Original:**

“提供软件著作权证书复印件或扫描件，所有复印件或扫描件均需加盖原厂商公章”

“Provide a copy or scanning copy of the software copyright certificate. All copies or scanned copies shall be affixed with the official seal of the original manufacturer”

**修改为:**

**Modified as:**

“提供软件著作权证书复印件”

“Provide a copy of the software copyright certificate.”



序号 113: 人工智能与大数据教学、科研服务器集群

S.N.:113 AI and big data teaching, scientific research server cluster

原规定:

**Original:**

- 1.国际国内主流品牌，机型满足但不限于 2U 机架式服务器
- 2.芯片组性能等同于或由于 Intel C621A 芯片组性能;
- 3.处理器 $\geq 2$  颗 X86 架构 CPU 处理器，性能等同于或优于 Intel 银牌处理器性能，内核数 $\geq 10$  核，主频 $\geq 2.4\text{GHz}$ ，最大支持 28 核 205W 处理器;
- 4.内存 $\geq 64\text{GB}$ ，满足 24 DIMM 插槽，支持扩展 $\geq 3\text{TB}$  内存，频率 $\geq 3200\text{MHz}$ ;
- 5.硬盘 $\geq 2$  块 1TB SATA 热插拔固态硬盘，最大支持 40 个 2.5 寸硬盘扩展，支持但不限于直连 U.2 NVMe SSD 硬盘。支持但不限于内置 $\geq 2$ 个 M.2 固态硬盘，支持但不限于 RAID 0/1; 满足但不限于配置 $\geq 1$  块 12Gbps 高性能且支持硬盘直通的阵列控制器。
- 6.网卡: 满足 $\geq 1$  块双口 16GB 光纤 HBA 卡; 配置 $\geq 2$  个万兆光接口网卡;  $\geq 2$  口千兆以太网网卡;
- 7.电源: 满足但不限于 $\geq 750\text{W}$  白金级热插拔，支持 1+1 冗余电源，支持 240V 高压直流，支持但不限于 $\geq 6$  个冗余热插拔系统风扇;
- 8.I/O 扩展: 支持 $\geq 8$  个 PCIe 插槽，满足但不限于 VGA 接口，满足但不限于 USB 口连接手机管理服务器;
- 9.服务器管理软件: 提供但不限于与硬件相适应的服务器管理软件，满足但不限于管理服务器、网络、存储等功能，提供相应管理软件的手机版本（包括安卓和 IOS 版本）。
- 10.可靠性和质保: 满足但不限于平均无故障运行时间 MTBF 不低于 15 万小时，提供相关认证证书复印件，提供 3C 认证证书、环境标志产品认证证书;
- 11.抗干扰: 正常工作承受的浪涌（冲击）抗扰度 $\geq 4\text{kV}$ （线线/线地）; 正常工作所承受的连续波辐射骚扰抗扰度 $\geq 10\text{V/m}$ ; 正常工作所承受的工频磁场抗扰度 $\geq 10\text{A/m}$ ; 并提供国家级认证机构 NCTC 相关证明材料;
- 12.服务: 提供原厂针对本项目的售后服务承诺函原件;
- 13.配置相应的 KVM 切换器



1. Mainstream brand at home and abroad, 2U rack-mounted server or above
2. Chipset: equivalent or superior to Intel C621A chipset
3. CPUs: at least two X86 CPUs, equivalent or superior to Intel Silver CPUs; number of cores:  $\geq 10$ ; master frequency:  $\geq 2.4\text{GHz}$ ; maximum 28-core 205W CPUs;
4. Memory:  $\geq 64\text{GB}$ , suitable for 24 DIMM slots, supporting extension to  $\geq 3\text{TB}$  or greater; frequency:  $\geq 3200\text{MHz}$ ;
5. Hard disks:  $\geq 2$  1TB SATA hot swappable solid-state drives (SSDs), suitable for extension to 40 2.5-inch hard disks and connection of 2 NVMe SSDs but without limitation. It supports at least two built-in M.2 solid-state drives, RAID 0/1 and at least one 12 Gbit/s high-performance array controller suitable for pass-through hard disks, but without limitation.
6. Network card:  $\geq 1$  two-port 16 Gbit/s optical fiber HBA card;  $\geq 2$  10-gigabit optical interface cards; and  $\geq 2$  two-port Gigabit Ethernet network cards;
7. Power source:  $\geq 750\text{W}$  platinum hot-plug power supply, 1+1 redundant power supply, 240V high-voltage DC power supply,  $\geq 6$  redundant hot-plug fans;
8. IO extension: at least support  $\geq 8$  pcs of PCIe slots, VGA ports and USB ports for connection to the mobile phone management server.
9. Server management software: include the server management software compatible with hardware and the functions of the management server, network and memory but without limitation, the mobile phone version (including Android and IOS versions) of the corresponding management software.
10. Reliability and quality assurance: meet the requirements for the MTBF of no less than 150,000 hours, and provide copies of relevant certificates, including 3C certificates and environmental label certificates;
11. Anti-interference: surge (impact) immunity in normal operation:  $\geq 4\text{kV}$  (line-to-line and line-to-ground); continuous wave radiation immunity in normal operation:  $\geq 10\text{V/m}$ ; PF magnetic field immunity in normal operation:  $\geq 10\text{A/m}$ ; provide related certificates issued by the national certification organization NCTC.



12. Service: Provide the original letter of commitment regarding after-sales service issued by the original manufacturer for this project;

13. Configure corresponding KVM switch.

修改为:

**Modified as:**

1.CPU: 配置 2 颗等同于或优于 Intel Xeon 4314 处理器(单颗 16 核心,32 线程,2.4GHz 主频)。

2.内存: 配置≥256GB DDR4 内存,支持 16 个内存插槽;

3.硬盘: 配置配置 2 块 480GB SSD+2 块 1.92TB SD 企业级热插拔硬盘,前置支持 12 块 3.5 寸或 25 块 2.5 寸热插拔硬盘;

4.RAID: 配置独立 SAS RAID 卡,支持 RAID 0.1.10。

5.网络: 配置≥1 块双口 16GB 光纤 HBA 卡, 2 个千兆电口+2 个万兆光网口(含多模模块); 可选标准 PCIE 网卡, 提供 1G、10G、25G、100G 多种网络接口。

6.电源: 配置 550W 1+1 冗余热插拔; 支持 550W/800W/1300W 铂金电源。

7.IO 扩展: 支持≥5 个标准 PCIe 插槽。

8.管理: 支持与服务器同品牌的服务器管理软件; 要求支持所纳管的设备节点具备统一的操作管理界面, 实现包括但不限于查看设备硬件状态, 实现服务器虚拟 KVM 统一登录, 实现远程电源控制等功能; 要求支持服务器全生命周期日志的收集及一键下载, 日志包括带外日志(MC 日志、SDR 日志、Sensor 日志、SOL 日志、SEL 日志、黑盒日志、寄存器日志), 带内日志(Raid 卡日志、SMART 日志、系统日志、BIOS 信息);

9.服务: 提供原厂≥3 年原厂质保服务, 提供原厂针对本项目的售后服务承诺函;

1. CPU: Configured with 2 processors equivalent to or better than the Intel Xeon 4314 processor (single processor with 16 cores, 32 threads, 2.4GHz clock speed).

2. Memory: Equipped with ≥256GB DDR4 memory, supporting 16 memory slots.

3. Hard Drive: Configured with 2 units of 480GB SSD and 2 units of 1.92TB SD enterprise-grade hot-swappable hard drives. Front-end supports 12 units of 3.5-inch or 25 units of 2.5-inch hot-swappable hard drives.

4. RAID: Equipped with an independent SAS RAID card, supporting RAID 0, 1, 10.



5. Network: Configured with  $\geq 1$  dual-port 16GB Fiber HBA card, 2 Gigabit Ethernet ports + 2 10 Gigabit optical network ports (including multimode modules). Optional standard PCIe network card providing various network interfaces such as 1G, 10G, 25G, 100G.
6. Power Supply: Configured with 550W 1+1 redundant hot-swappable power supplies; supports 550W/800W/1300W platinum power supplies.
7. IO Expansion: Supports  $\geq 5$  standard PCIe slots.
8. Management: Supports server management software from the same brand as the server. Requires unified operational management interface for managed device nodes, including but not limited to viewing device hardware status, unified login for server virtual KVM, remote power control, etc. Requires support for collecting and one-click downloading of server lifecycle logs, including out-of-band logs (MC logs, SDR logs, Sensor logs, SOL logs, SEL logs, black box logs, register logs), in-band logs (Raid card logs, SMART logs, system logs, BIOS information).
9. Services: Provides original manufacturer's  $\geq 3$  years of original warranty services, along with the original manufacturer's post-sales service commitment letter tailored for this project.

**序号 115: 人工智能计算处理节点群**

**S.N.:115: AI computing cluster nodes**

**原规定:**

**Original:**

- 1.国际国内主流品牌，机型满足但不限于 2U 机架式服务器
- 2.芯片组性能等同于或由于 Intel C621A 芯片组性能;
- 3.处理器 $\geq 2$  颗 X86 架构 CPU 处理器，性能等同于或由于 Intel 银牌处理器性能，核数 $\geq 10$  核，主频 $\geq 2.4\text{GHz}$ ;
- 4.内存 $\geq 256\text{GB}$ ，满足但不限于 24 DIMM 插槽，频率 $\geq 3200\text{MHz}$ ;
- 5.硬盘 $\geq 1$  块 2TB SATA 热插拔固态硬盘，支持但不限于 RAID 0/1;
- 6.满足但不限于配置 $\geq 1$  块 12Gbps 高性能且支持硬盘直通的阵列控制器。



7.网卡：满足 $\geq 1$ 块双口 16GB 光纤 HBA 卡；配置 $\geq 2$ 个万兆光接口网卡； $\geq 2$ 口千兆以太网网卡；

8.显卡：配置独立专业级显卡，显存 $\geq 4G$ ；

9.电源： $\geq 750W$  白金级热插拔，支持 1+1 冗余电源，支持 240V 高压直流，支持但不限于 $\geq 6$ 个冗余热插拔系统风扇

10.I/O 扩展：支持 $\geq 8$ 个 PCIe 插槽，满足但不限于 VGA 接口，满足配置独立显卡，显存 $\geq 2G$ ；满足但不限于 USB 口连接手机管理服务器；

11.服务器管理：提供但不限于与硬件相适应的服务器管理软件，满足但不限于管理服务器、网络、存储等功能，提供相应管理软件的手机版本（包括安卓和 IOS 版本）。

12.可靠性和质保：满足但不限于平均无故障运行时间 MTBF 不低于 15 万小时，提供相关认证证书复印件，提供 3C 认证证书、环境标志产品认证证书；

13.抗干扰：正常工作承受的浪涌（冲击）抗扰度 $\geq 4kV$ （线线/线地）；正常工作所承受的连续波辐射骚扰抗扰度 $\geq 10V/m$ ；正常工作所承受的工频磁场抗扰度 $\geq 10A/m$ ；并提供国家级认证机构 NCTC 相关证明材料；

14.服务：提供原厂针对本项目的售后服务承诺函原件；

1. Mainstream brand at home and abroad, 2U rack-mounted server or above

2. Chipset: equivalent or superior to Intel C621A chipset

3. CPUs:  $\geq 2$  pcs of X86 CPUs, equivalent or superior to Intel Silver CPUs; number of cores:  $\geq 10$ ; master frequency:  $\geq 2.4GHz$ ;

4. Memory:  $\geq 256GB$ , suitable for 24 DIMM slots or more; frequency:  $\geq 3200MHz$ ;

5. 2TB SATA hot swappable solid-state disk, RAID 0/1 or above;

6. Meet but not limited to  $\geq 1 \times 12$  Gbps high-performance array controller suitable for pass-through hard disks.

7. Network card: meet  $\geq 1$  pc of 2-port 16 GB, optical fiber HBA card; equipped with  $\geq 2$  pcs of 10-gigabit optical interface cards;  $\geq 2$  two-port Gigabit Ethernet network cards;

8. Graphics card: professional level discrete graphics card:  $\geq 4G$ ;



9. Power source:  $\geq 750W$  platinum hot-plug power supply, 1+1 redundant power supply, 240V high-voltage DC power supply,  $\geq 6$  redundant hot-plug fans;
10. I/O extension: support  $\geq 8$  PCIe slots, VGA ports, discrete graphics card:  $\geq 2G$ , and USB ports for connection to the mobile phone management server;
11. Server management: include the server management software compatible with hardware and the functions of the management server, network and memory but without limitation, the mobile phone version (including Android and IOS versions) of the corresponding management software.
12. Reliability and quality assurance: meet the requirements for the MTBF of no less than 150,000 hours, and provide copies of relevant certificates, including 3C certificates and environmental label certificates;
13. Anti-interference: surge (impact) immunity in normal operation:  $\geq 4kV$  (line-to-line and line-to-ground); continuous wave radiation immunity in normal operation:  $\geq 10V/m$ ; PF magnetic field immunity in normal operation:  $\geq 10A/m$ ; provide related certificates issued by the national certification organization NCTC.
14. Service: Provide the original letter of commitment regarding after-sales service issued by the original manufacturer for this project
15. Configure the appropriate KVM switch.

修改为:

**Modified as:**

1. CPU: 配置 2 颗等同于或优于 Intel Xeon 5318Y 处理器(单颗 24 核心,48 线程,2.1GHz 主频)。
2. 内存: 配置  $\geq 512GB$  DDR4 内存,支持 32 个内存插槽;
3. 硬盘: 配置  $\geq 2$  块 480GB SSD+4 块 1.92TB SSD 企业级热插拔硬盘; 前置支持 12 块 3.5 寸或 25 块 2.5 寸热插拔硬盘;
4. RAID: 配置独立 SAS RAID 卡,支持 RAID 0.1.10。
5. 网络: 配置  $\geq 1$  块双口 16GB 光纤 HBA 卡,2 个千兆电口+2 个万兆光网口 (含多模模块); 可选标准 PCIE 网卡, 提供 1G、10G、25G、100G 多种网络接口。
6. 电源: 配置 800W 1+1 冗余热插拔; 支持 550W/800W/1300W 铂金电源。



7.显卡：配置 RTX A2000 独立专业级显卡，显存 $\geq 6\text{G}$ ；支持 $\geq 11$  个标准 PCIe 插槽。

8.管理：支持与服务器同品牌的服务器管理软件；要求支持所纳管的设备节点具备统一的操作管理界面，实现包括但不限于查看设备硬件状态，实现服务器虚拟 KVM 统一登录，实现远程电源控制等功能；要求支持服务器全生命周期日志的收集及一键下载，日志包括带外日志（MC 日志、SDR 日志、Sensor 日志、SOL 日志、SEL 日志、黑盒日志、寄存器日志），带内日志（Raid 卡日志、SMART 日志、系统日志、BIOS 信息）；

9.服务：提供原厂 $\geq 3$  年原厂质保服务，提供原厂针对本项目的售后服务承诺函；

1. CPU: Configure 2 processors equivalent to or superior to Intel Xeon 5318Y (single 24 core, 48 threads, 2.1GHz main frequency).

2. Memory: Equipped with  $\geq 512\text{GB}$  DDR4 memory, supporting 32 memory slots;

3. Hard disk: configuration  $\geq 2$  480GB SSDs+4 1.92TB SSD enterprise level hot swappable hard disks; Front support for 12 3.5-inch or 25 2.5-inch hot swappable hard drives;

4. RAID: Configure an independent SAS RAID card that supports RAID 0.1.10.

5. Network: Configure  $\geq 1$  dual port 16GB fiber optic HBA card, 2 gigabit electrical ports and 2 10 gigabit optical network ports (including multimode modules); Optional standard PCIE network card, providing multiple network interfaces of 1G, 10G, 25G, and 100G.

6. Power supply: Equipped with 800W 1+1 redundant waste heat plugging; Supports 550W/800W/1300W platinum power supply.

7. Graphics card: Equipped with an RTX A2000 independent professional graphics card, with a graphics memory of  $\geq 6\text{GB}$ ; Supports  $\geq 11$  standard PCIe slots.

8. Management: Support server management software of the same brand as the server; Require that the device nodes supporting the hosting management have a unified operation management interface, which includes but is not limited to viewing the hardware status of the devices, achieving unified login of virtual KVM servers, and achieving remote power control functions; Require support for the collection and one



click download of server full lifecycle logs, including out of band logs (MC logs, SDR logs, Sensor logs, SOL logs, SEL logs, black box logs, register logs), and in band logs (Raid card logs, SMART logs, system logs, BIOS information);

9. Services: Provides original manufacturer's  $\geq 3$  years of original warranty services, along with the original manufacturer's post-sales service commitment letter tailored for this project.

序号 122: 人工智能四足机器人开发平台

S.N.: 122: AI quadruped robot development platform

原规定:

**Original:**

3.负载 $\geq 20\text{Kg}$ ;

3. Load:  $\geq 20\text{Kg}$ ;

修改为:

**Modified as:**

\*3.负载 $\geq 20\text{Kg}$ ;

\*3. Load:  $\geq 20\text{Kg}$ ;

序号 124: 智能制造 3C 产线实训平台

S.N.: Intelligent manufacturing 3C production line training platform

原规定:

**Original:**

三、产品自动装配单元

5.8 控制软件: 工业机器人自动拧螺丝控制软件具有国家级计算机软件著作权登记证书等完全自主知识产权; 能提供长期软件免费升级服务; 上述提供相关证书影印件加盖原厂商公章。

六、配套资源

1.提供与设备配套的工业机器人技术专业系列教材样本 $\geq 1$ 套: 涉及工业机器人基础知识、安装、调试与维护、操作与编程、应用、仿真与离线编程、视觉技术、



工装设计等（须提供教材封面及目录复印件（原件备查））；提供配套教材封面复印件并注明 ISBN 编号和 CIP 核字号；

2. 以上教材的著作权均属于设备制造商，教材均由出版社公开出版发行；
3. 提供产品宣传册彩色印刷样本，宣传册需具有满足参数要求的生产线实物图片及相关技术描述；
4. 提供满足技术指标要求的自动生产线详细工作流程实物照片；
5. 具有自动化线实训教材（光盘或纸质文件）。提供教材封面及目录复印件（原件备查）；
6. 配套互联网教学平台及教学资源库系统；
7. 配套的互联网教学平台及教学资源库系统具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章；
8. 配套的工业机器人装配与维护 3D 虚拟仿真软件具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章；提供但不限于小型六自由度工业机器人、大型六轴工业机器人、水平关节工业机器人、并联蜘蛛手、五轴工业机器人等 5 种工业机器人本体进行软件虚拟仿真拆装的彩色截图，作为软件功能的佐证材料。

### III. Automatic assembly unit

5.8 Control software: the automatic screw control software of the industrial robot has completely independent intellectual property rights such as national computer software copyright registration certificate. Provide long-term software upgrade service free of charge; and scanned copies of relevant certificates affixed with original manufacturer's official seal should be for reference.

### VI. Supporting resources

1. Provide at least one sample of industrial robot technology book: including industrial robot fundamentals, installation, commissioning and maintenance, operation and programming, application, simulation and offline programming, vision technology, tooling design and so on (submit the duplicates of the cover and contents of the teaching material and keep the originals for future reference). Provide the



duplicates of the cover of the supporting teaching material, and marking the ISBN number and CIP approval number;

2. The copyright of the above teaching materials belongs to the equipment manufacturer, and the teaching materials are publicly issued.

3. Provide the color print samples of product brochures, including the production line pictures and related technical descriptions that meet the parameter requirements;

4. Provide the pictures of the detailed workflow of the automatic production line according to the requirements of technical indicators;

5. Provide the training materials (CD-ROM or paper documents) of the automatic production line. Submit the duplicates of the cover and contents of the teaching material (keep the originals for reference).

6. Provide the supporting online teaching platform and teaching resource library system;

7. The supporting online teaching platform and teaching resource library system has completely independent intellectual property rights such as national computer software copyright registration certificate, it also provides free long-term software upgrade service; it provides copies of relevant certificates affixed with official seal of the original manufacturer;

8. The supporting 3D virtual simulation software for industrial robot assembly and maintenance has fully independent intellectual property rights such as national computer software copyright registration certificate, and provide long-term free software upgrade service. Provide Photocopies of relevant certificates affixed with the official seal of the original manufacture; Provide the color screenshots of software simulation of the assembly and disassembly of five industrial robot bodies shall be submitted, including but not limited to the small-sized six-degree-of-freedom, large-sized 6-axis industrial robot, horizontal-joint industrial robot, parallel spider hands and 5-axis industrial robot, as the evidences of software functions.

修改为:

**Modified as:**



### 三、产品自动装配单元

5.8 控制软件：工业机器人必须满足自动拧螺丝控制功能；能提供长期软件免费升级服务；

### 六、配套资源

1.提供与设备配套的工业机器人技术专业系列教材样本≥1套：涉及工业机器人基础知识、安装、调试与维护、操作与编程、应用、仿真与离线编程、视觉技术、工装设计等

2.提供产品宣传册彩色印刷样本，宣传册需具有满足参数要求的生产线实物图片及相关技术描述；

3.提供满足技术指标要求的自动生产线详细工作流程实物照片；

4.具有自动化线实训教材（光盘或纸质文件）。提供教材封面及目录复印件（原件备查）；

5.配套互联网教学平台及教学资源库系统；

6.提供配套的互联网教学平台及教学资源库系统，并能提供长期软件免费升级服务；

7.配套的工业机器人装配与维护 3D 虚拟仿真软件具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务。

### III. Automatic assembly unit

5.8 Control software: Industrial robots must meet the automatic screw tightening control function; Can provide long-term free software upgrade services;

### VI. Supporting resources

1. Provide at least one sample of industrial robot technology book: including industrial robot fundamentals, installation, commissioning and maintenance, operation and programming, application, simulation and offline programming, vision technology, tooling design and so on

2. Provide the color print samples of product brochures, including the production line pictures and related technical descriptions that meet the parameter requirements;

3. Provide the pictures of the detailed workflow of the automatic production line according to the requirements of technical indicators;



4. Provide the training materials (CD-ROM or paper documents) of the automatic production line. Submit the duplicates of the cover and contents of the teaching material (keep the originals for reference).
5. Provide the supporting online teaching platform and teaching resource library system;
6. Provide supporting internet teaching platforms and teaching resource library systems, and provide long-term free software upgrade services;
7. The supporting 3D virtual simulation software for industrial robot assembly and maintenance has fully independent intellectual property rights such as national computer software copyright registration certificate, and provide long-term free software upgrade service.

**序号 125: 自主移动物流搬运机器人平台**

**S.N.: Autonomous mobile handling robot platform**

原规定:

**Original:**

四、机器人自主定位导航系统

\*7.满足基于激光雷达的 SLAM 算法，实现建立地图，自主导航，自主避障等功能；

六、应用案例包含但不限于：

12.ROS 移动机器人软件具有国家级计算机软件著作权登记证书等完全自主知识产权，可提供全部开源程序代码供学习，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章；

13.计算机视觉软件具有国家级计算机软件著作权登记证书等完全自主知识产权，可提供全部开源程序代码供学习，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

IV. Autonomous robot positioning and navigation system

\*7. LiDAR-based SLAM algorithm for mapping, autonomous navigation, autonomous obstacle avoidance and the like;



VI. Application cases include but without limitation:

12. ROS mobile robot software has completely independent intellectual property rights such as the national computer software copyright registration certificate. All open source program codes shall be provided for learning. Software upgrade services shall be provided free of charge for a long time. Duplicates of relevant certificates affixed with official seal of original manufacturer shall be submitted.

13. Computer vision software has completely independent intellectual property rights such as the national computer software copyright registration certificate. All open source program codes shall be provided for learning. Software upgrade services shall be provided free of charge for a long time. Duplicates of relevant certificates affixed with official seal of original manufacturer shall be submitted.

修改为:

**Modified as:**

四、机器人自主定位导航系统

7.满足基于激光雷达的 SLAM 算法, 实现建立地图, 自主导航, 自主避障等功能;

六、应用案例包含但不限于:

12. ROS 移动机器人软件可提供全部开源程序代码供学习, 并能提供长期软件免费升级服务;

13.计算机视觉软件具有国家级计算机软件著作权登记证书等完全自主知识产权, 可提供全部开源程序代码供学习, 并能提供长期软件免费升级服务。

IV. Autonomous robot positioning and navigation system

7. LiDAR-based SLAM algorithm for mapping, autonomous navigation, autonomous obstacle avoidance and the like;

VI. Application cases include but without limitation:

12. All open source program codes of the ROS mobile robot software shall be provided for learning. Software upgrade services shall be provided free of charge for a long time.

13. Computer vision software has completely independent intellectual property rights such as the national computer software copyright registration certificate. All open



source program codes shall be provided for learning. Software upgrade services shall be provided free of charge for a long time.

序号 126: 人工智能柔性协作教学平台

S.N.: 126: AI flexible collaborative teaching platform

原规定:

**Original:**

2. 机器人控制器

2.1 轻巧型控制箱, 移动、搬运便捷, 重量  $\leq 4\text{kg}$ ;

2.2 编程接口满足 C++、Python、ROS 等;

2.3 通讯协议支持但不限于 TCP/IP、Modbus RTU, RS485、EtherNET;

2.4 运动方式满足但不限于关节运动、直线运动、直线圆弧运动、servo 运动;

2.5 输入接口  $\geq 8$  个数字 I/O,  $\geq 2$  个模拟 I/O, 输出接口  $\geq 8$  个数字 I/O,  $\geq 2$  个模拟 I/O;

2.6 电源: 单相 220V/50-60Hz, 功率  $\geq 400\text{W}$ ;

2.7 设备生产厂商通过认证范围覆盖该类设备设计、生产等过程的 ISO9001 质量管理体系认证、ISO14001 环境管理体系认证及 ISO45001 职业健康安全管理体系认证, 以保证设备设计及其制造过程的质量、环保性及职业健康安全。

二、快换装置

1. 满足但不限于 1 拖 3 快换模块, 支持多种末端工具;

2. 每个快换装置均具有气路和电路接口, 支持各种执行端应用;

3. 末端负载  $\geq 1\text{kg}$ ;

4. 快换装置具有国家专利, 确保产品及技术的先进性, 同时可避免第三方知识产权纠纷及法律诉讼, 专利权的所有权为设备厂商所有。提供相关证书影印件, 提供证书原件及官方网站备查。

三、开源智能视觉检测系统

2.10 工业机器人视觉软件具有国家级计算机软件著作权登记证书等完全自主知识产权, 并能提供长期软件免费升级服务; 提供相关证书影印件加盖原厂商公章;



2.11 提供视觉技术相关的配套教材封面及目录复印件（原件备查）并注明 ISBN 编号和 CIP 核字号，教材的著作权均属于设备制造商。

#### 五、自动拧螺丝装配系统组件

10.控制软件：机器人自动拧螺丝控制软件具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

#### 六、自动分拣插件组件

9.控制软件：机器人自动分拣插件控制软件具有国家级计算机软件著作权登记证书等完全自主知识产权，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

#### 十二、ROS 开源案例

8.ROS 六轴机器人软件具有国家级计算机软件著作权登记证书等完全自主知识产权，可提供全部开源程序代码供学习，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

#### 十三、基于 Python/C++开发案例

8.协作机器人软件具有国家级计算机软件著作权登记证书等完全自主知识产权，可提供全部开源程序代码供学习，并能提供长期软件免费升级服务；提供相关证书影印件加盖原厂商公章。

#### 2. Robot controller

2.1 Lightweight control box, easy to move and handle; weight:  $\leq 4\text{kg}$ ;

2.2 Programming interfaces: C++, Python, ROS, etc.

2.3 Communication protocols: including but not limited to TCP/IP, Modbus RTU, RS485, EtherNET;

2.4 Motion modes: including but not limited to joint motion, linear motion, linear arc motion and servoj motion;



2.5 Input ports:  $\geq 8$  digital I/O ports,  $\geq 2$  analog I/O ports; output ports:  $\geq 8$  digital I/O ports,  $\geq 2$  analog I/O ports;

2.6 Power source: single-phase 220V/50-60Hz; power:  $\geq 400$ W;

2.7. Equipment manufacturers comply with ISO9001 quality management system certification, ISO14001 environmental management system certification and ISO45001 occupational health and safety management system certification for equipment design and production process to ensure the quality, environmental protection and occupational health and safety of equipment design and manufacturing process.

## II. Quick change tool

1. At least include 1-to-3 quick change module, supporting a variety of end tools;
2. Each quick change tool has pneumatic and electrical interfaces for execution terminals;
3. Terminal load:  $\geq 1$ kg;
4. Quick change tool has national patents to ensure the advancement of products and technologies, while avoiding third-party intellectual property disputes and legal proceedings. The ownership of the patent rights belongs to the equipment manufacturer. Provide the copies of relevant certificates and keep the original certificates and official website for future reference.

## III. Open source intelligent visual inspection system

2.10 Industrial robot vision software has completely independent intellectual property rights such as national computer software copyright registration certificate, it also provides free long-term software upgrade service; it provides photocopies of relevant certificates affixed with the official seal of the original manufacturer;

2.11 Provide the duplicates of the cover and contents of the supporting textbooks related to vision technology (keep originals for reference), and mark the ISBN number and CIP approval number. The copyright of textbooks shall belong to equipment manufacturers.

## V. Components of automatic screw assembly system



10. Control software: the automatic screw control software of the robot has completely independent intellectual property rights such as national computer software copyright registration certificate. Provide long-term software upgrade service free of charge; and the duplicates of relevant certificates affixed with the official seal of the original manufacturer.

VI. Automatic sorting and plugging assembly

9. Control software: the automatic sorting and plugging software of the robot has completely independent intellectual property rights such as national computer software copyright registration certificate. Provide long-term software upgrade service free of charge; and the duplicates of relevant certificates affixed with the official seal of the original manufacturer.

XII. ROS open source cases

8. ROS 6-axis robot software has completely independent intellectual property rights such as the national computer software copyright registration certificate. All open source program codes shall be provided for learning. Software upgrade services shall be provided free of charge for a long time. Duplicates of relevant certificates affixed with the official seal of the original manufacturer

XIII. Development cases based on Python/C++

8. Collaborative robot software has completely independent intellectual property rights such as the national computer software copyright registration certificate. All open source program codes shall be provided for learning. Software upgrade services shall be provided free of charge for a long time. Duplicates of relevant certificates affixed with the official seal of the original manufacturer.

修改为:

**Modified as:**

2. 机器人控制器

2.1 轻巧型控制箱，移动、搬运便捷，重量 ≤4kg;

2.2 编程接口满足 C++、Python、ROS 等;



- 2.3 通讯协议支持但不限于 TCP/IP、Modbus RTU, RS485、EtherNET;
- 2.4 运动方式满足但不限于关节运动、直线运动、直线圆弧运动、servo 运动;
- 2.5 输入接口 $\geq 8$  个数字 I/O,  $\geq 2$  个模拟 I/O, 输出接口 $\geq 8$  个数字 I/O,  $\geq 2$  个模拟 I/O;
- 2.6 电源: 单相 220V/50-60Hz, 功率 $\geq 400W$ ;

## 二、快换装置

- 1.满足但不限于 1 拖 3 快换模块, 支持多种末端工具;
- 2.每个快换装置均具有气路和电路接口, 支持各种执行端应用;
- 3.末端负载 $\geq 1kg$ ;

## 三、开源智能视觉检测系统

- 2.10 工业机器人视觉软件具有国家级计算机软件著作权登记证书等完全自主知识产权, 并能提供长期软件免费升级服务;
- 2.11 提供视觉技术相关的配套教材封面及目录复印件 (原件备查)

## 五、自动拧螺丝装配系统组件

- 10.控制软件: 满足机器人自动拧螺丝控制功能, 并能提供长期软件免费升级服务。

## 六、自动分拣插件组件

- 9.控制软件: 机器人满足自动分拣插件控制功能, 并能提供长期软件免费升级服务。

## 十二、ROS 开源案例

- 8. ROS 六轴机器人软件可提供全部开源程序代码供学习, 并能提供长期软件免费升级服务。

### 2. Robot controller

- 2.1 Lightweight control box, easy to move and handle; weight:  $\leq 4kg$ ;



2.2 Programming interfaces: C++, Python, ROS, etc.

2.3 Communication protocols: including but not limited to TCP/IP, Modbus RTU, RS485, EtherNET;

2.4 Motion modes: including but not limited to joint motion, linear motion, linear arc motion and servoj motion;

2.5 Input ports:  $\geq 8$  digital I/O ports,  $\geq 2$  analog I/O ports; output ports:  $\geq 8$  digital I/O ports,  $\geq 2$  analog I/O ports;

2.6 Power source: single-phase 220V/50-60Hz; power:  $\geq 400$ W;

## II. Quick change tool

1. At least include 1-to-3 quick change module, supporting a variety of end tools;
2. Each quick change tool has pneumatic and electrical interfaces for execution terminals;
3. Terminal load:  $\geq 1$ kg;

## III. Open source intelligent visual inspection system

2.10 Industrial robot vision software has completely independent intellectual property rights such as national computer software copyright registration certificate, it also provides free long-term software upgrade service;

2.11 Provide the duplicates of the cover and contents of the supporting textbooks related to vision technology (keep originals for reference).

## V. Components of automatic screw assembly system

10. Control software: It meets the automatic screw tightening control function of robots and can provide long-term software upgrade services for free.

## VI. Automatic sorting and plugging assembly

9. Control software: The robot meets the automatic sorting plugin control function and can provide long-term free software upgrade services.

## XII. ROS open source cases

8. ROS 6-axis robot software can provide all open source program codes for learning, and can provide long-term free software upgrade services.



序号 135: 大数据实验教学平台

**S.N.: 135: Big data experiment teaching platform**

原规定:

**Original:**

二、软件功能

17.提供该软件的软件著作权证书影印件加盖原厂商公章。

II. Software functions

17. A duplicate of the software copyright certificate affixed with the official seal of the original manufacturer should be provided.

修改为:

**Modified as:**

二、软件功能

17.提供该软件的软件著作权证书影印件。

II. Software functions

Provide a photocopy of the software copyright certificate for the software.

序号 141: 教学电脑

**S.N.: 141: Teaching computer**

原规定:

**Original:**

1.国际品牌电脑,不接受组装机;并提供产品的厂家正品彩页资料;

2.CPU 性能等同于或优于 Intel i5 处理器性能,核数 $\geq 4$ 核;

3.内存 $\geq 8$ GB;

4.硬盘 $\geq 512$ GB 固态硬盘;

5.显卡:独立显卡,显存 $\geq 2$ G;

6.网卡:集成网卡,速率 $\geq 1000$ Mbps;

7.接口:包含但不限于 $\geq 2$ 个 Type-c 端口、 $\geq 2$ 个 USB 3.0 端口、包含但不限于麦克风端口和耳机端口;



- 8.显示器：同品牌 $\geq 23.8$ 英寸液晶显示器；
  - 9.操作系统：预装正版 windows 10 64 位专业版操作系统；
  - 10.软件功能：包含但不限于备份与恢复软件、底层同传软件、系统保护还原软件，提供免费永久升级服务。
  - 11.质保：提供原厂商售后服务承诺函原件。
1. International brand computers rather than assembly machines; the manufacturer's color page information of the product is provided;
  2. The CPU performance is equal to or better than that of Intel i5 processor, and the number of CPU cores is  $\geq 4$ ;
  3. Memory  $\geq 8$ GB;
  4. Hard disk:  $\geq 512$ GB SSD;
  5. Graphics card: Discrete graphics card, VRAM  $\geq 2$ G;
  6. Network card: NIC, rate  $\geq 1000$ Mbps;
  7. Interface: Including but not limited to  $\geq 2$  Type-c ports,  $\geq 2$  USB 3.0 ports, including but not limited to microphone jack and headphone jack;
  8. Display: The same brand  $\geq 23.8$ " LCD monitor;
  9. Operating system: Preinstalled genuine Windows 10 64-bit professional operating system;
  10. Software functions: Including but not limited to backup and recovery software, underlying simultaneous interpretation software, system recovery software, and permanent free upgrade services.
  11. Warranty: Provide the original letter of commitment regarding after-sales service issued by the original manufacturer.

修改为：

**Modified as:**

- 1.国际品牌电脑，不接受组装机；
- 2.CPU 性能等同于或优于 Intel i5 处理器性能，核数 $\geq 6$ 核；
- 3.内存 $\geq 16$ GB；
- 4.硬盘 $\geq 512$ GB 固态硬盘；



- 5.显卡：集成显卡；
  - 6.网卡：集成网卡，速率 $\geq 1000\text{Mbps}$ ；
  - 7.接口：包含但不限于 $\geq 2$  个 Type-c 端口、 $\geq 2$  个 USB 3.0 端口、包含但不限于麦克风端口和耳机端口；
  - 8.显示器：同品牌 $\geq 21$  英寸液晶显示器；
  - 9.操作系统：预装正版 windows 10 64 位专业版操作系统；
  - 10.软件功能：包含但不限于备份与恢复软件、底层同传软件、系统保护还原软件，提供免费永久升级服务。
  - 11.质保：提供原厂商售后服务承诺函。
1. International brand computers rather than assembly machines;
  2. The CPU performance is equal to or better than the Intel i5 processor performance, with a core count of  $\geq 6$  cores;
  3. Memory  $\geq 16\text{GB}$ ;
  4. Hard disk  $\geq 512\text{GB}$  solid-state hard disk;
  5. Graphics card: Integrated graphics card;
  6. Network card: Integrated network card, with a speed of  $\geq 1000\text{Mbps}$ ;
  7. Interface: including but not limited to  $\geq 2$  Type-c ports,  $\geq 2$  USB 3.0 ports, including but not limited to microphone ports and headphone ports;
  8. Display: Same brand  $\geq 21$  inch LCD display;
  9. Operating system: pre installed genuine Windows 10 64 bit professional operating system;
  10. Software functions: including but not limited to backup and recovery software, bottom layer simultaneous interpreting software, system protection and restore software, providing free permanent upgrade services.
  11. Warranty: Provide the original letter of commitment regarding after-sales service issued by the original manufacturer.

序号 144：实时频谱仪

S.N.: 144: Real-time spectrum analyzer



原规定:

**Original:**

1. 频率范围满足但不限于 9 kHz-7.5 GHz、跟踪源范围 100KHz 至 7.5GHz;
1. The frequency range shall be 9 kHz-7.5 GHz, and the tracking source range within 100KHz to 7.5GHz;

修改为:

**Modified as:**

- \*1. 频率范围满足但不限于 9 kHz-7.5 GHz、跟踪源范围 100KHz 至 7.5GHz;
- \*1. The frequency range shall be 9 kHz-7.5 GHz, and the tracking source range within 100KHz to 7.5GHz;

序号 145: 多通道示波器

**S.N.: 145: Multi-channel oscilloscope**

原规定:

**Original:**

1. 模拟通道带宽 $\geq 500$  MHz;
3. 实时采样率: 模拟通道 $\geq 10$  GSa/s;
4. 存储深度: 模拟通道 $\geq 500$  Mpts;
5. 波形捕获率 $\geq 600,000$  个波形每秒;
6. 垂直灵敏度范围满足但不限于 1mV/div~10V/div (1M $\Omega$ );
7. 时基范围: 500ps/div~1 ks/div;
8. 满足但不限于 $\geq 45$  万帧硬件实时波形不间断录制和回放功能;
9. 提供但不限于数字电压表、6 位频率计和累加器;
10. 触发功能包含但不限于: 边沿、脉宽、斜率、视频、码型、持续时间、RS232、I2C、SPI、CAN 等;
11. 串行总线解码功能包含但不限于: RS232、I2C、SPI、CAN、FlexRay、LIN、I2S 等, 支持 $\geq 4$  个解码通道;
12. 软件: 包含但不限于电源分析软件;
13. 屏幕:  $\geq 10.1$  英寸多点触控屏;



14.接口包含但不限于：USB Host 、USB Device、LAN(LXI)、HDMI、TRIG OUT、GPIB(USB-GPIB)等；

15.满足但不限于 VGA 输出、10MHz 输入/输出、Aux 输出；

16.质保：提供原厂商售后服务承诺函原件。

1. Analog channel bandwidth  $\geq 500$  MHz;

3. Real-time sampling frequency: Analog channel  $\geq 10$  GSa/s;

4. Storage depth: Analog channel  $\geq 500$  Mpts;

5. Waveform capture rate  $\geq 600,000$  waveforms per second;

6. The vertical sensitivity range shall be 1mV/div~10V/div (1M $\Omega$ );

7. Time base range: 500ps/div~1 ks/div;

8. Hardware real-time waveform uninterrupted recording and playback of  $\geq 450,000$  frames;

9. Provide digital voltmeter, 6-digit frequency meter and accumulator;

10. Trigger functions include but are not limited to: Edge, pulse width, slope, video, pattern, duration, RS232, I2C, SPI, and CAN;

11. Serial bus decoding functions include but are not limited to: RS232, I2C, SPI, CAN, FlexRay, LIN, and I2S, support  $\geq 4$  decoding channels;

12. Software: Including but not limited to power analysis software;

13. Display:  $\geq 10.1$ " multi-touch screen;

14. Interfaces include but are not limited to: USB Host, USB Device, LAN (LXI), HDMI, TRIG OUT, GPIB (USB-GPIB), etc.;

15. Include VGA output, 10MHz input/output, Aux output;

16. Warranty: Provide the original letter of commitment regarding after-sales service issued by the original manufacturer.

修改为：

**Modified as:**

1.模拟通道带宽 $\geq 500$  MHz;

\*2.实时采样率：模拟通道 $\geq 10$  GSa/s;

3. 存储深度：模拟通道 $\geq 500$  Mpts;



4. 波形捕获率 $\geq 600,000$  个波形每秒;
  5. 垂直灵敏度范围满足但不限于  $1\text{mV/div}\sim 10\text{V/div}$  ( $1\text{M}\Omega$ );
  6. 时基范围:  $500\text{ps/div}\sim 1\text{ks/div}$ ;
  7. 满足但不限于 $\geq 45$  万帧硬件实时波形不间断录制和回放功能;
  8. 提供但不限于数字电压表、6 位频率计和累加器;
  9. 触发功能包含但不限于: 边沿、脉宽、斜率、视频、码型、持续时间、RS232、I2C、SPI、CAN 等;
  10. 串行总线解码功能包含但不限于: RS232、I2C、SPI、CAN、FlexRay、LIN、I2S 等, 支持 $\geq 4$  个解码通道;
  11. 软件: 包含但不限于电源分析软件;
  12. 屏幕:  $\geq 10.1$  英寸多点触控屏;
  13. 接口包含但不限于: USB、LAN 等;
  14. 满足但不限于 VGA 输出及 Aux 输出;
  15. 质保: 提供原厂商售后服务承诺函, 原厂保修 $\geq 3$  年。
1. Analog channel bandwidth  $\geq 500\text{ MHz}$ ;
  - \*2. Real-time sampling frequency: Analog channel  $\geq 10\text{ GSa/s}$ ;
  3. Storage depth: Analog channel  $\geq 500\text{ Mpts}$ ;
  4. Waveform capture rate  $\geq 600,000$  waveforms per second;
  5. The vertical sensitivity range shall be  $1\text{mV/div}\sim 10\text{V/div}$  ( $1\text{M}\Omega$ );
  6. Time base range:  $500\text{ps/div}\sim 1\text{ks/div}$ ;
  7. Hardware real-time waveform uninterrupted recording and playback of  $\geq 450,000$  frames;
  8. Provide digital voltmeter, 6-digit frequency meter and accumulator;
  9. Trigger functions include but are not limited to: Edge, pulse width, slope, video, pattern, duration, RS232, I2C, SPI, and CAN;
  10. Serial bus decoding functions include but are not limited to: RS232, I2C, SPI, CAN, FlexRay, LIN, and I2S, support  $\geq 4$  decoding channels;
  11. Software: Including but not limited to power analysis software;
  12. Display:  $\geq 10.1$ " multi-touch screen;



13. Interfaces include but are not limited to: USB, LAN, etc.;
14. Include VGA output, 10MHz input/output, Aux output;
15. Warranty: Provide the original letter of commitment regarding after-sales service issued by the original manufacturer; the original factory warranty is  $\geq 3$  years.

**序号 146: 函数/任意波形发生器**

**S.N.: 146: Function/arbitrary waveform generator**

**原规定:**

**Original:**

1. 正弦输出频率 $\geq 350\text{MHz}$ ; 任意波输出频率满足但不限于  $1\mu\text{Hz}-50\text{MHz}$ ;
  2. 采样率 $\geq 1\text{GSa/s}$ 、垂直分辨率 $\geq 14\text{bit}$ ;
  3. 通道数 $\geq 2$ , 支持但不限于频率耦合和相位耦合。
  4. 标准波形函数 $\geq 14$  种, 包含但不限于正弦波、方波、锯齿波、脉冲波、噪声、Sinc、指数上升、指数下降、心电图、高斯、半正矢、洛仑兹、双音频和 DC 电压等;
  5. 任意波特性 $\geq 128\text{Mpts}$ , 包含但不限于普通采样率固定、播放采样率可调等输出模式;
  6. 支持但不限于频率扫描和脉冲串输出, 扫描方式包含但不限于线性、对数、步进。扫描输出包含但不限于起始保持时间、终止保持时间、返回时间、标记频率等;
  7. 模拟和数字调制满足但不限于 AM/FM/PM/PWM、ASK/FSK/PSK/IQ。IQ 调制支持但不限于自定义、IQ 矢量信号调制、IQ 基带/中频信号输出等;
  8. 闪存: 满足但不限于配置 $\geq 1\text{GB}$ ;
  9. 屏幕:  $\geq 4.3$  英寸液晶显示屏;
  10. 质保: 提供原厂商售后服务承诺函原件。
1. Sinusoidal output frequency  $\geq 350\text{MHz}$ ; arbitrary wave output frequency shall be  $1\mu\text{Hz}-50\text{MHz}$ ;
  2. Sampling rate  $\geq 1\text{GSa/s}$ , vertical resolution  $\geq 14\text{bit}$ ;



3. Number of channels  $\geq 2$ , support frequency coupling and phase coupling.
4. Standard waveform functions  $\geq 14$  kinds, including but not limited to Sine, Square, Ramp, Pulse, Noise, Sinc, Exponential Rise, Exponential Fall, ECG, Gaussian, Haversine, Lorentz, Dual Tone and DC voltage;
5. Arbitrary wave characteristics  $\geq 128$ Mpts, including but not limited to output modes such as ordinary fixed sampling rate and adjustable playback sampling rate;
6. Support frequency scanning and pulse train output, scanning methods include but are not limited to linear, logarithmic, stepping. Scan output includes but is not limited to start hold time, end hold time, return time, mark frequency, etc.;
7. Analog and digital modulations include AM/FM/PM/PWM, ASK/FSK/PSK/IQ. IQ modulation supports custom, IQ vector signal modulation, IQ baseband/IF signal output, etc.;
8. Flash memory:  $\geq 1$  GB;
9. Display:  $\geq 4.3$ " LCD screen;
10. Warranty: Provide the original letter of commitment regarding after-sales service issued by the original manufacturer.

修改为:

**Modified as:**

- \*1. 正弦输出频率 $\geq 350$ MHz; 任意波输出频率满足但不限于 1uHZ-50MHz;
- \*2. 采样率 $\geq 1$ GSa/s、垂直分辨率 $\geq 14$ bit;
3. 通道数 $\geq 2$ , 支持但不限于频率耦合和相位耦合。
4. 标准波形函数 $\geq 14$ 种, 包含但不限于正弦波、方波、锯齿波、脉冲波、噪声、Sinc、指数上升、指数下降、心电图、高斯、半正矢、洛仑兹、双音频和 DC 电压等;
5. 任意波特性 $\geq 128$ Mpts, 包含但不限于普通采样率固定、播放采样率可调等输出模式;
6. 支持但不限于频率扫描和脉冲串输出, 扫描方式包含但不限于线性、对数、步进。扫描输出包含但不限于起始保持时间、终止保持时间、返回时间、标记频率等;



- 
- 7.模拟和数字调制满足但不限于 AM/FM/PM/PWM、ASK/FSK/PSK/IQ。IQ 调制支持但不限于自定义、IQ 矢量信号调制、IQ 基带/中频信号输出等；
  - 8.闪存：满足但不限于配置 $\geq 512\text{MB}$ ；
  - 9.屏幕： $\geq 4.3$  英寸液晶显示屏；
  - 10.质保：提供原厂商售后服务承诺函，原厂保修 $\geq 3$ 年。
- \*1. Sinusoidal output frequency  $\geq 350\text{MHz}$ ; arbitrary wave output frequency shall be  $1\mu\text{Hz}-50\text{MHz}$ ;
  - \*2. Sampling rate  $\geq 1\text{GSa/s}$ , vertical resolution  $\geq 14\text{bit}$ ;
  3. Number of channels  $\geq 2$ , support frequency coupling and phase coupling.
  4. Standard waveform functions  $\geq 14$  kinds, including but not limited to Sine, Square, Ramp, Pulse, Noise, Sinc, Exponential Rise, Exponential Fall, ECG, Gaussian, Haversine, Lorentz, Dual Tone and DC voltage;
  5. Arbitrary wave characteristics  $\geq 128\text{Mpts}$ , including but not limited to output modes such as ordinary fixed sampling rate and adjustable playback sampling rate;
  6. Support frequency scanning and pulse train output, scanning methods include but are not limited to linear, logarithmic, stepping. Scan output includes but is not limited to start hold time, end hold time, return time, mark frequency, etc.;
  7. Analog and digital modulations include AM/FM/PM/PWM, ASK/FSK/PSK/IQ. IQ modulation supports custom, IQ vector signal modulation, IQ baseband/IF signal output, etc.;
  8. Flash memory:  $\geq 512\text{MB}$ ;
  9. Display:  $\geq 4.3$ " LCD screen;
  10. Warranty: Provide the original letter of commitment regarding after-sales service issued by the original manufacturer; the original factory warranty is  $\geq 3$  years.

**序号 148：数字扩音系统**

**S.N.:148: Digital PA system**

**原规定：**

**Original:**



## 一、功放

- 1.采用一体化设计，集成：D类数字功放，红外线无线接收模块，红外传感器，反馈抑制模块、扬声器于一体。须提供具有 CNAS 标志的“检验报告”进行证明；
- 2.话筒高低音输入调节旋钮
- 3.频道组数 $\geq 2$  通道，支持两支无线话筒同时使用
- 4.超广角多阵列式红外线接收管 $\geq 24$  颗，须提供具有 CNAS 标志的“检验报告”进行证明。
- 5.输入接口：RCA $\geq 2$ ；TRS $\geq 1$ ；RJ45 网口 $\geq 1$ ；
- 6.单元组成：二分频，低音 $\geq 6.5$ "；
- 7.频率响应：75Hz~15KHz  $\pm 3$ dB；
8. T.H.D. $< 1\%$  @ 10KHz Deviation；
- 9.信噪比 $> 60$ dB(MIC 1.2.)， $> 70$ dB(LINE)， $> 100$ dB(IR MIC)；
- 10.工作距离 $> 100$  m<sup>2</sup>(15m line of sight )；
- 11.动态范围 100dB；
- 12.RF 载波稳定性： $\pm 0.005\%$  (-10°C-40°C)；
- 13.RMS 输出功率:Max 2x40W @ 8 $\Omega$ ；
- 14.输入灵敏度:1.5mV(MIC 1.2.)，150mV(LINE)；
- 15.输入阻抗:2K $\Omega$  (MIC 1.2.)，47 $\Omega$  (LINE)；
- 16.箱体采用 12 层实木，五边形设计，方便安装调整角度；
- 17.提供国家认可的 CCC 证书，产品检验报告，红外线音频技术专利证书并加盖生产厂商公章；
- 18.提供省级或以上“高新技术产品证书”；
- 19.含符合实际现场环境并与功放输出功率相匹配的音响 $\geq 1$  对；

## 二、红外话筒

- 1.无线传输制式：红外线(波长 850nm)，高灵敏度红外线发射管 $\geq 6$  颗，须提供具有 CNAS 标志的“检验报告”进行证明；
- 2.拾音传感器：电容式驻极体音头 ECM；
- 3.通道调节：双通道设计，可自由调节通道；
- 4.电池工作时间 $\geq 6$  小时；



- 5.电池：1 节 AA（3.7V）可充电锂离子电池，支持两种充电方式：座充或 Type-C 充电；
- 6.安全电路设计：电池反装不会短路，电池反装充电不会短路，装入性能不匹配电池不工作、不充电；
- 7.外部音源接入：能支持外部音源输入，可连接手机等移动设备；
- 8.采用水滴形外观，重量≤50g；
- 9.佩戴方式：可颈挂，颈挂绳在受到一定拉力的情况下自动断开，并可手动复位；
- 10.音量调节：采用滚轮式音量调节钮；
- 11.功率调节：可调节发射功率大小；
- 12.兼容性：兼容同品牌红外线全系列接收设备；
- 13.提供外观专利证书，并加盖生产厂商公章；
- 14.提供具有 CNAS 标志的“防火等级检验报告”；
- 15.获得省级或以上“高新技术产品证书”；

### 三、红外无线音频传输器

- 1.实现外部音源（电脑、手机、平板）的无线音频传输，即插即用，无须安装任何软件，无须任何设置；
- 2.无线传输制式：红外线（波长 850nm），高灵敏度红外线发射管≥6 颗，须提供具有 CNAS 标志的“检验报告”进行证明；
- 3.供电电源：DC 5V, 500mA；
- 4.接口：3.5mm 立体声输入,USB 供电，长度≥2 米；
- 5.重量≤85 g；
- 6.提供国家认可的产品检验报告，并加盖生产厂商公章；

### 四、充电器

- 1.标配两个充电位，且每个充电位都能给两种不同形状话筒充电（颈挂水滴形话筒、手持话筒），且两种话筒可以互换充电位充电。须提供具有 CNAS 标志的“检验报告”进行证明；
- 2.充电保护：对不关话筒的情况下可以自动断开内部电路并进行充电；
- 3.充电指示：可根据充电指示灯判断充电情况；



4. 电池识别保护：能自动识别是否是充电电池，检测到非充电电池会自动断电保护；

5. 电源：DC 9V, 1A；

6. 充电电压电流：DC 5V, 500mA；

#### I. Power amplifier

1. Integrated with: Class D digital power amplifier, infrared wireless receiving module, infrared sensor, feedback suppression module, and speaker. The "inspection report" with the CNAS logo must be provided;

2. Microphone high and low input adjustment knob

3. Channel groups  $\geq 2$  channels, support two wireless microphones at the same time

4. Ultra-wide-angle multi-array infrared receiving tubes  $\geq 24$ , the "inspection report" with the CNAS logo must be provided;

5. Input interface: RCA $\geq 2$ ; TRS $\geq 1$ ; RJ45 port $\geq 1$ ;

6. Unit composition: Two-way, bass  $\geq 6.5$ ";

7. Frequency response: 75Hz~15KHz  $\pm 3$ dB;

8. T.H.D. $< 1\%$  @ 10KHz Deviation;

9. Signal to operation ratio  $> 60$ dB (MIC 1.2.),  $> 70$ dB (LINE),  $> 100$ dB (IR MIC);

10. Working distance:  $> 100$  m<sup>2</sup> (15m line of sight);

11. Dynamic range 100dB;

12. RF carrier stability:  $\pm 0.005\%$  (-10°C-40°C);

13. RMS output power: Max 2x40W @ 8Ω;

14. Input sensitivity: 1.5mV (MIC 1.2.), 150mV (LINE);

15. Input impedance: 2KΩ (MIC 1.2.), 47Ω (LINE);

16. The box is made of 12 layers of solid wood in pentagonal shape, which is easy to install and adjust the angle;

17. Provide the nationally recognized CCC certificate, product inspection report, infrared audio technology patent certificate and affixed with official seal of the manufacturer;

18. Provide provincial or above "high-tech product certificate";



19. With  $\geq 1$  pair of speakers that conform to the actual site environment and match the output power of the power amplifier;

## II. Infrared receiver

1. Wireless transmission system: Infrared (wavelength 850nm), high-sensitivity infrared emission tube  $\geq 6$ , provided with "inspection report" with the CNAS logo;

2. Pickup sensor: Condenser electret capsule ECM;

3. Channel adjustment: Dual-channel, which can be adjusted freely;

4. Battery life  $\geq 6$  hours;

5. Battery: 1 AA (3.7V) rechargeable lithium-ion battery, supports: Adapter or Type-C charging;

6. Safety circuit design: The battery will not be short-circuited if the battery is connected backwards. The battery will not work and not charge if the batteries are not matched;

7. External audio source access: Support external audio input, can be connected to mobile devices such as mobile phones;

8. Water drop shape, and the weight  $\leq 50$ g;

9. Way of wearing: Hung on the neck, and the string will be automatically disconnected under excessive tension and can be reset manually;

10. Volume regulation: Rolling wheel;

11. Power regulation: Transmit power is adjustable;

12. Compatibility: Compatible with a full range of infrared receivers of the same brand;

13. Provide the appearance patent certificate and affix the official seal of the manufacturer;

14. Provide "fire protection grading inspection report" with the CNAS logo;

15. Certified with provincial or above "high-tech product certificate";

## III. Infrared wireless audio transmitter

1. Wireless audio transmission of external audio sources (computer, mobile phone, tablet), plug and play, no need to install any software or additional settings;



2. Wireless transmission system: Infrared (wavelength 850nm), high-sensitivity infrared emission tube  $\geq 6$ , provided with "inspection report" with the CNAS logo;
3. Supply voltage: DC 5V, 500mA;
4. Interface: 3.5mm stereo input, USB power supply, length  $\geq 2$  meters;
5. Weight  $\leq 85$ g;
6. Provide the nationally recognized certificate affixed with official seal of the manufacturer;

#### IV. Charger

1. For standard charger, there are two charging positions, and each can charge two different shapes of microphones (neck-hanging drop-shaped microphone, hand-held microphone), and the two microphones can be charged with interchangeable charging positions. The "inspection report" with the CNAS logo must be provided;
2. Charging protection: The internal circuit can be automatically disconnected and charged without turning off the microphone;
3. Charging indicator: Identify the charging status according to the charging indicator;
4. Battery identification protection: It's able to identify whether it is rechargeable, and it will automatically shut off if it's non-rechargeable;
5. Power source: DC 9V, 1A
6. Charging voltage and current: DC 5V, 500mA;

修改为:

#### Modified as:

##### 一、功放

- 1.采用一体化设计，集成：D类数字功放，红外线无线接收模块，红外传感器，反馈抑制模块、扬声器于一体；
- 2.话筒高低音输入调节旋钮；
- 3.频道组数 $\geq 2$ 通道，支持两支无线话筒同时使用
- 4.超广角多阵列式红外线接收管 $\geq 24$ 颗；
- 5.输入接口：RCA $\geq 2$ ；TRS $\geq 1$ ；RJ45网口 $\geq 1$ ；
- 6.单元组成：二分频，低音 $\geq 6.5$ "；



- 7.频率响应: 75Hz~15KHz  $\pm$ 3dB;
8. T.H.D.< 1% @ 10KHz Deviation;
- 9.信噪比>60dB(MIC 1.2.), >70dB(LINE), >100dB(IR MIC);
- 10.工作距离> 100 m<sup>2</sup>(15m line of sight );
- 11.动态范围 100dB;
- 12.RF 载波稳定性: $\pm$ 0.005% (-10°C-40°C);
- 13.RMS 输出功率:Max 2x40W @ 8 $\Omega$ ;
- 14.输入灵敏度:1.5mV(MIC 1.2.), 150mV(LINE);
- 15.输入阻抗:2K $\Omega$  (MIC 1.2.), 47 $\Omega$  (LINE);
- 16.箱体采用 12 层实木, 五边形设计, 方便安装调整角度;
- 17.含符合实际现场环境并与功放输出功率相匹配的音响 $\geq$ 1 对;

## 二、红外话筒

- 1.无线传输制式: 红外线(波长 850nm), 高灵敏度红外线发射管 $\geq$ 6 颗;
- 2.拾音传感器: 电容式驻极体音头 ECM;
- 3.通道调节: 双通道设计, 可自由调节通道;
- 4.电池工作时间 $\geq$ 6 小时;
- 5.电池: 1 节 AA (3.7V)可充电锂离子电池, 支持两种充电方式: 座充或 Type-C 充电;
- 6.安全电路设计: 电池反装不会短路, 电池反装充电不会短路, 装入性能不匹配电池不工作、不充电;
- 7.外部音源接入: 能支持外部音源输入, 可连接手机等移动设备;
- 8.采用水滴形外观, 重量 $\leq$ 50g;
- 9.佩戴方式: 可颈挂, 颈挂绳在受到一定拉力的情况下自动断开, 并可手动复位;
- 10.音量调节: 采用滚轮式音量调节钮;
- 11.功率调节: 可调节发射功率大小;
- 12.兼容性: 兼容同品牌红外线全系列接收设备;

## 三、红外无线音频传输器

- 1.实现外部音源(电脑、手机、平板)的无线音频传输, 即插即用, 无须安装任何软件, 无须任何设置;



2.无线传输制式：红外线（波长 850nm），高灵敏度红外线发射管≥6 颗；

3.供电电源：DC 5V, 500mA；

4.接口：3.5mm 立体声输入,USB 供电，长度≥2 米；

5.重量≤85 g；

#### 四、充电器

1.标配两个充电位，且每个充电位都能给两种不同形状话筒充电（颈挂水滴形话筒、手持话筒），且两种话筒可以互换充电位充电。

2.充电保护：对不关话筒的情况下可以自动断开内部电路并进行充电；

3.充电指示：可根据充电指示灯判断充电情况；

4.电池识别保护：能自动识别是否是充电电池，检测到非充电电池会自动断电保护；

5.电源：DC 9V, 1A；

6.充电电压电流：DC 5V, 500mA；

#### I. Power amplifier

1. Integrated with: Class D digital power amplifier, infrared wireless receiving module, infrared sensor, feedback suppression module, and speaker;

2. Microphone high and low input adjustment knob

3. Channel groups  $\geq 2$  channels, support two wireless microphones at the same time

4. Ultra-wide-angle multi-array infrared receiving tubes  $\geq 24$ ;

5. Input interface: RCA $\geq 2$ ;TRS $\geq 1$ ; RJ45 port $\geq 1$ ;

6. Unit composition: Two-way, bass  $\geq 6.5$ ";

7. Frequency response: 75Hz~15KHz  $\pm 3$ dB;

8. T.H.D.< 1% @ 10KHz Deviation;

9. Signal to operation ratio>60dB (MIC 1.2.) , >70dB(LINE), >100dB(IR MIC);

10. Working distance: > 100 m<sup>2</sup>(15m line of sight);

11. Dynamic range 100dB;

12. RF carrier stability:  $\pm 0.005\%$  (-10°C-40°C);

13. RMS output power: Max 2x40W @ 8Ω;

14. Input sensitivity: 1.5mV (MIC 1.2.) , 150mV (LINE);



15. Input impedance:  $2K\Omega$  (MIC 1.2.) ,  $47\Omega$  (LINE);

16. The box is made of 12 layers of solid wood in pentagonal shape, which is easy to install and adjust the angle;

17. With  $\geq 1$  pair of speakers that conform to the actual site environment and match the output power of the power amplifier;

## II. Infrared receiver

1. Wireless transmission system: Infrared (wavelength 850nm), high-sensitivity infrared emission tube  $\geq 6$ ;

2. Pickup sensor: Condenser electret capsule ECM;

3. Channel adjustment: Dual-channel, which can be adjusted freely;

4. Battery life  $\geq 6$  hours;

5. Battery: 1 AA (3.7V) rechargeable lithium-ion battery, supports: Adapter or Type-C charging;

6. Safety circuit design: The battery will not be short-circuited if the battery is connected backwards. The battery will not work and not charge if the batteries are not matched;

7. External audio source access: Support external audio input, can be connected to mobile devices such as mobile phones;

8. Water drop shape, and the weight  $\leq 50g$ ;

9. Way of wearing: Hung on the neck, and the string will be automatically disconnected under excessive tension and can be reset manually;

10. Volume regulation: Rolling wheel;

11. Power regulation: Transmit power is adjustable;

12. Compatibility: Compatible with a full range of infrared receivers of the same brand;

## III. Infrared wireless audio transmitter

1. Wireless audio transmission of external audio sources (computer, mobile phone, tablet), plug and play, no need to install any software or additional settings;



2. Wireless transmission system: Infrared (wavelength 850nm), high-sensitivity infrared emission tube  $\geq 6$ ;
3. Supply voltage: DC 5V, 500mA;
4. Interface: 3.5mm stereo input, USB power supply, length  $\geq 2$  meters;
5. Weight  $\leq 85$ g;
6. Provide the nationally recognized certificate affixed with official seal of the manufacturer;

#### IV. Charger

1. For standard charger, there are two charging positions, and each can charge two different shapes of microphones (neck-hanging drop-shaped microphone, hand-held microphone), and the two microphones can be charged with interchangeable charging positions.;
2. Charging protection: The internal circuit can be automatically disconnected and charged without turning off the microphone;
3. Charging indicator: Identify the charging status according to the charging indicator;
4. Battery identification protection: It's able to identify whether it is rechargeable, and it will automatically shut off if it's non-rechargeable;
5. Power source: DC 9V, 1A
6. Charging voltage and current: DC 5V, 500mA;

#### 序号 150: 图形工作站

##### **S.N.:150: Graphic workstation**

原规定:

##### **Original:**

- 1.国际知名品牌, 不接受组装机; 并提供产品的厂家正品彩页资料;
- 2.CPU 核心数 $\geq 4$ 核, 主频 $\geq 2.9$ GHz; 性能等同于或优于 Intel Xeon W-2102;
- 3.内存 $\geq 32$ GB DDR4 内存;
- 4.硬盘 $\geq 1$ 块 512GB 固态硬盘;
- 5.显存 $\geq 4$ G,专业级独立显卡;



- 6.网卡：满足但不限于集成以太网连，传输速率 $\geq 1000\text{bps}$ ；
  - 7.接口：包含但不限于 $\geq 2$ 个 Type-c 端口、 $\geq 2$ 个 USB 3.0 端口、包含但不限于麦克风端口和耳机端口；
  - 8.显示器：同品牌 $\geq 23.8$ 英寸液晶显示器；
  - 9.软件功能：包含但不限于备份与恢复软件、底层同传软件、系统保护还原软件，提供免费永久升级服务；
  - 10.质保：提供原厂商售后服务承诺函原件。
1. International brand, rather than assembly machines; the manufacturer's color page information of the product is provided;
  2. CPU cores  $\geq 4$ , main frequency  $\geq 2.9\text{GHz}$ ; the performance is equal to or better than Intel Xeon W-2102;
  3. Memory  $\geq 32\text{GB DDR4}$ ;
  4. SSD storage  $\geq 1$  pc of 512GB;
  5. VRAM  $\geq 4\text{G}$ , professional level discrete graphics card;
  6. Network card: Integrated NIC, transmission speed  $\geq 1000\text{bps}$ ;
  7. Interface: Including but not limited to  $\geq 2$  pcs of Type-C ports,  $\geq 2$  pcs of USB 3.0 ports, including but not limited to microphone jack and headphone jack;
  8. Display: The same brand  $\geq 23.8$ " LCD monitor;
  9. Software functions: Including but not limited to backup and recovery software, underlying simultaneous interpretation software, system recovery software, and permanent free upgrade services.
  10. Warranty: Provide the original letter of commitment regarding after-sales service issued by the original manufacturer.

修改为：

**Modified as:**

知名品牌商用机，机器配置必须原厂原配，不接受组装机及拆改配机器。

- 1.主板:等同于或优于 intel Q670 芯片组;
- 2.CPU:等同于或优于 12 代 Intel 酷睿 i5-12500 (六核心十二线程, 主频: 3.0Ghz, 睿频: 4.6GHz,18MB 三级缓存);



- 3.内存:≥16GB DDR5 4400MHz, 4 个内存插槽, 最大支持扩展至 128G ;
- 4.硬盘: ≥ 256G M.2 SSD+1TB SATA 7200 转机械硬盘;
- 5.接口:≥10 个 USB 端口 (≥6 个 USB 3.2 端口), 2×DP 端口, 1×RJ45 端口, PS/2 端口, 串口; 扩展插槽: ≥1 个 PCIe×16, ≥1 个 PCIe×4, ≥1 个 PCIe×1, ≥1 个 PCI, ≥4 个 SATA 插槽
- 6.显卡:等同于或优于 Nvidai RTX3060 12G 独立显卡;
- 7.操作系统:预装正版 windows11 操作系统或更高版本操作系统;
- 8.显示器:与主机同品牌 21.5 英寸液晶显示器×2;
- 9.电源:≥500W 电源;
- 10.键鼠:同一品牌 USB 键盘及鼠;
- 11.软件: 每台电脑需安装正版机房管理系统软件: 支持 B /S 管理架构, 移动设备通过网页方式对机房进行远程管理, 包括远程开关机、时间同步、系统切换、消息广播等操作; 支持对 3DMAX、CAD 等图形设计、工程设计类软件的统一注册, 无需手动逐台激活, 方便维护; 支持立即还原和 ip 地址自动分配; 支持电脑本地硬盘操作系统 (xp\win7\win10\linux) 的立即还原和还原点瞬间创建; 支持 MBR 分区系统和 GPT 分区系统混合安装,可支持 60 个以上的不同操作系统; 支持 SSD 硬盘和机械硬盘双硬盘保护模式和同传; 支持从 WINDOWS 界面对 1000 台以上的电脑进行数据差异拷贝, 非增量拷贝、变量拷贝、进度同步等; 支持操作系统分权管理, 可分配不同的管理员管理不同的操作系统; 支持学期课表的编辑, 可设置学期开始和结束时间, 按学期课表时间自动启动相应的操作系统, 支持操作系统拖拽式导入学期课表; 支持批量修改 Windows 用户登录名、计算机名和 IP 地址; 支持网络限制策略, 能够设定禁用外网或禁用全部网络, 并支持设置例外, 例外类型包括但不限于 ip 地址、网址、端口, 并设置生效时间区间, 能够精确到秒, 支持按天执行、按周执行、按月执行。
- 12.提供≥三年免费保修及上门服务, 及原厂售后服务承诺函; 按照客户要求免费安装指定软件。

Famous brand commercial machines must be equipped with original equipment from the factory, and assembly machines and disassembly and modification machines are not acceptable.



1. Motherboard: equivalent to or superior to Intel Q670 chipset;
2. CPU: Equivalent to or better than the 12th generation Intel Core i5-12500 (six cores and twelve threads, main frequency: 3.0GHz, core frequency: 4.6GHz, 18MB three-level cache);
3. Memory:  $\geq 16\text{GB}$  DDR5 4400MHz, 4 memory slots, maximum support for expansion to 128GB;
4. Hard disk:  $\geq 256\text{G}$  M.2 SSD+1TB SATA 7200 RPM mechanical hard disk;
5. Interface:  $\geq 10$  USB ports ( $\geq 6$  USB 3.2 ports),  $2 \times$  DP port,  $1 \times$  RJ45 port, PS/2 port, serial port; Expansion slot:  $\geq 1$  PCIe  $\times 16$ ,  $\geq 1$  PCIe  $\times 4$ ,  $\geq 1$  PCIe  $\times 1$ ,  $\geq 1$  PCI,  $\geq 4$  SATA slots
6. Graphics card: equivalent to or superior to Nvidia RTX3060 12G independent graphics card;
7. Operating system: Preinstall the genuine Windows 11 operating system or higher version of the operating system;
8. Display: 21.5-inch LCD display of the same brand as the host  $\times 2$ ;
9. Power supply:  $\geq 500\text{W}$  power supply;
10. Keyboard and mouse: USB keyboard and mouse of the same brand;
11. Software: Each computer needs to be equipped with a genuine computer room management system software that supports B/S management architecture. Mobile devices can remotely manage the computer room through web pages, including remote on/off, time synchronization, system switching, message broadcasting, and other operations; Support unified registration of graphic design and engineering design software such as 3DMAX and CAD, without the need for manual activation one by one, facilitating maintenance; Supports immediate restore and automatic allocation of IP addresses; Support immediate restore and instant creation of restore points for the local hard drive operating system of the computer (xp win7 win10 Linux); Support mixed installation of MBR partition system and GPT partition system, and can support more than 60 different operating systems; Support SSD hard disk and mechanical hard disk dual hard disk protection mode and simultaneous interpreting;



Support data differential copying, non incremental copying, variable copying, progress synchronization, etc. for over 1000 computers from the WINDOWS interface; Support for decentralized management of operating systems, with the ability to assign different administrators to manage different operating systems; Support the editing of the semester schedule, set the start and end times of the semester, automatically start the corresponding operating system according to the semester schedule time, and support the dragging and dropping import of the semester schedule from the operating system; Support batch modification of Windows user login names, computer names, and IP addresses; Support network restriction policies, be able to disable external networks or disable all networks, and support setting exceptions. Exception types include but are not limited to IP addresses, website addresses, ports, and set effective time intervals that can be precise to seconds. Support execution by day, week, and month.

12. Provide at least three years of free warranty and on-site service, as well as a commitment letter for the original factory's after-sales service; Install designated software for free according to customer requirements.

序号 160: 交换机

S.N.: 160: Switch

**原规定:**

Original:

全千兆 24 口二层交换机

1000MB 24-port layer 2 switch

**修改为:**

**Modified as:**

知名一线品牌产品, 24 个 10/100/1000Base-T 自适应以太网端口, 4 个千兆 SFP 口, 交换容量: 336Gbps/3.36Tbps; 包转发率: 51Mpps/126Mpps。

First well-known brands products, 24 10/100/1000Base-T adaptive Ethernet ports, 4 Gigabit SFP ports, switching capacity: 336Gbps/3.36Tbps; Packet forwarding rate: 51Mpps/126Mpps.



序号 161: 机柜

**S.N.:161: Cabinet**

原规定:

**Original:**

42U, 含散热风扇

42U, including fan

修改为:

**Modified as:**

42U, 含散热风扇, 提供专业的防浪涌 PDU 电源。

42U, including cooling fan, providing professional anti surge PDU power supply.

序号 162: 实验桌凳

**S.N.:162: Laboratory table and chair**

原规定:

**Original:**

桌子尺寸不低于 1500mm 长×750mm 宽×1200mm 高

The table is no smaller than 1500mm long x 750mm wide x 1200mm high

修改为:

**Modified as:**

桌子尺寸不低于≥1600mm 长×750mm 宽×1200mm 高 (含配套凳子)

The table is no smaller than ≥1600mm in length × 750mm in width × 1200mm in height (including chairs).



序号：166 精品录播跟踪一体服务器

S.N.: 166: High-quality recording and tracking integrated server

精品录播跟踪一体服务器

原规定：

**Original:**

一、硬件功能参数

**I. Hardware parameters**

6.采集卡需通过国家广播电影电视总局测试合格（需提供广电总局颁发的测试报告复印件）；

6. The capture card must pass the test of the National Radio and Television Administration (a copy of the test report issued by the National Radio and Television Administration is required);

修改为：

**Modified as:**

一、硬件功能参数

6.提供产品合格证书；

**I. Hardware parameters**

6. Provide product qualification certificates;

原规定：

**Original:**

11.录播主机应通过国家电子计算机质量监督检测中心严格检测，平均无故障工作时间（MTBF） $\geq 25000$  小时（需提供检测证书复印件）。

11. The playback host should comply with the requirements of the National Electronic Computer Quality Supervision and Testing Center, with a mean time between failures (MTBF)  $\geq 25,000$  hours (a copy of the test certificate should be provided).

修改为：



**Modified as:**

- 11.平均无故障工作时间 (MTBF)  $\geq 25000$  小时 (需提供第三方专业机构检测报告)。  
11. Average Mean Time Between Failures (MTBF)  $\geq 25000$  hours (Third-party professional institution testing report required).

**原规定:**

**Original:**

二、录播系统功能参数

- 7.实现多路信号录制, 支持 1920×1080 MPEG2-I 100M 高质量格式录制 $\geq 5$ 路输入画面; 支持 1920×1080 MPEG2\_IBP 25M  $\geq 5$ 路资源通道和 $\geq 1$ 路 H.264/H.265 High Profile 2M MP4 (可直播)的最终输出画面; (提供软件截图, 加盖厂家公章)

**II. Parameters of recording system**

7. Support multi-channel signal recording, 1920x1080 MPEG2-I 100M high-quality format recording  $\geq 5$  channels of input images; support 1920x1080 MPEG2\_IBP 25M  $\geq 5$  channels of resource channels and  $\geq 1$  channel of final output (live feed) of H.264/H.265 High Profile 2M MP4; (software screenshot affixed with the official seal of the manufacturer shall be provided)

**修改为:**

**Modified as:**

二、录播系统功能参数

- 7.实现多路信号录制, 支持 1920×1080 MPEG2-I 100M 高质量格式录制 $\geq 5$ 路输入画面; 支持 1920×1080 MPEG2\_IBP 25M  $\geq 5$ 路资源通道和 $\geq 1$ 路 H.264/H.265 High Profile 2M MP4 (可直播)的最终输出画面;

**II. Parameters of recording system**

7. Support multi-channel signal recording, 1920x1080 MPEG2-I 100M high-quality format recording  $\geq 5$  channels of input images; support 1920x1080 MPEG2\_IBP 25M  $\geq 5$  channels of resource channels and  $\geq 1$  channel of final output (live feed) of H.264/H.265 High Profile 2M MP4;

**原规定:**



**Original:**

17. 充分满足教师 PPT 课件录制，可录制教师移动鼠标进行教学的鼠标移动轨迹，以便视频课程能还原课堂场景。支持无压缩高码率的 iVGA 录制，通过安装在教师机的采集软件，实现将教师机视频信号传输到录播主机；

17. Support the recording of the mouse movement track of the lecture, so that the classroom scene is perfectly restored. Support uncompressed high-bit rate iVGA recording, through the acquisition software installed on the teacher's computer, the video signal of the teacher's computer can be transmitted to the recording host;

**修改为:**

**Modified as:**

17. 充分满足教师 PPT 课件录制，可录制教师移动鼠标进行教学的鼠标移动轨迹，以便视频课程能还原课堂场景。支持无压缩高码率的 iVGA 或 HDMI 录制，通过安装在教师机的采集软件，实现将教师机视频信号传输到录播主机；

17. Support the recording of the mouse movement track of the lecture, so that the classroom scene is perfectly restored. Support uncompressed high-bit rate iVGA or HDMI recording, through the acquisition software installed on the teacher's computer, the video signal of the teacher's computer can be transmitted to the recording host;

**原规定:**

**Original:**

**三、跟踪服务软件功能需求（满足但不限于）**

3. 支持区域屏蔽功能，避免这个区域内的人员干扰录课，提高系统识别效果（需提供此功能软件界面配置截图）；

**III. Track service software functional requirements (meet but not limited to)**

3. Support area shielding to avoid interference with recording lessons and improve system recognition effect (functional screenshots of software interface configuration should be provided);



修改为:

**Modified as:**

三、跟踪服务软件功能需求（满足但不限于）

3.支持区域屏蔽功能，避免这个区域内的人员干扰录课，提高系统识别效果；

**III. Track service software functional requirements (meet but not limited to)**

3. Support area shielding to avoid interference with recording lessons and improve system recognition effect;

原规定:

**Original:**

11.需提供国家版权局出具的跟踪系统软件著作权证书复印件及软件产品测试报告复印件。

11.A copy of the tracking system software copyright certificate and the copy of the software product test report issued by the National Copyright Administration shall be provided.

修改为:

**Modified as:**

（整体删除）（Delete all）

序号：171： 纳米黑板

**S.N.: 171: Nano blackboard**

原规定:

**Original:**

一、整体技术要求

4.显示尺寸≥86 英寸，显示尺寸≥1898.24mm×1069.17mm，单屏物理分辨率≥3840×2160；

1. Overall technical requirements

4. Display size ≥86", display size ≥1898.24mm x 1069.17mm, single screen physical resolution ≥3840 x 2160;



修改为:

**Modified as:**

4.显示尺寸≥86 英寸，单屏物理分辨率≥3840×2160;

1. Overall technical requirements

4. Display size ≥86", single screen physical resolution ≥3840 x 2160;

序号：172：互联黑板

S.N.: 172: Interconnected blackboard

原规定:

**Original:**

一、整体技术要求

9.授权开机：支持 U 盘加密狗功能，教师可通过 U 盘授权使用；

**1. Overall technical requirements**

9. Authorized boot: Support flash drive dongle for teachers to authorize;

修改为:

**Modified as:**

一、整体技术要求

9.授权开机：系统具备按用户授权开机的功能；

**1. Overall technical requirements**

9. Authorized boot: The system has the function of booting according to user authorization;

原规定:

**Original:**

15.电磁兼容性能：需通过射频感应的传导骚扰抗扰度试验，射频电磁场辐射抗扰度试验，电压暂降、短时中断和电压变化等试验检测，并提供测试报告；

15. Electromagnetic compatibility performance: It shall pass the radio frequency induction conducted disturbance immunity test, radio frequency electromagnetic field



radiation immunity test, voltage sag, short-term interruption and voltage change test, and provided with test report;

修改为:

**Modified as:**

15.电磁兼容性能: 提供 3C 认证相关资料;

15. Electromagnetic compatibility performance: Provide 3C certification related materials;

序号: 179: 无线 AP

S.N.:179: Wireless AP

原规定:

**Original:**

1.企业级无线路由器;

1. Enterprise wireless router;

修改为:

**Modified as:**

1.企业级无线路由器; 须与学校原有 AC 控制器兼容;

1. Enterprise wireless router; Must be compatible with the school's existing AC controller;

序号: 189 : 智慧教室终端一体机

S.N.: 189: Smart classroom terminal all-in-one machine

原规定:

**Original:**

四、精品录播功能需求

\*1.内置精品录播系统, 具备 $\geq 5$ 路 SDI 输入接口、 $\geq 4$ 路 RJ-45 网络接口、 $\geq 1$ 路 DMT 输入接口、 $\geq 2$ 个 HDMI 输出接口; 具备 $\geq 6$ 路 Mic 音频输入接口 (提供相关产品图



片加盖厂家公章)；

\*1. Built-in high-quality playback system, with  $\geq 5$  SDI input interfaces,  $\geq 4$  RJ-45 network interfaces,  $\geq 1$  HDMI input interface,  $\geq 2$  HDMI output interfaces; with  $\geq 6$  Mic audio input interfaces (product pictures affixed with the official seal of the manufacturer shall be provided);

修改为:

**Modified as:**

四、精品录播功能需求

\*1.内置精品录播系统，具备 RJ-45 网络接口、HDMI 输入接口、HDMI 输出接口、Mic 音频输入接口且能够实现系统的集成且满足所有功能需求；

\*1. Built-in high-quality playback system, equipped with RJ-45 network interface, HDMI input interface, HDMI output interface, Mic audio input interface, and able to achieve system integration and meet all functional requirements;

原规定:

**Original:**

3.内置数字音频处理模块，具备自适应背景降噪(ANS)、自动增益控制(AGC),实现高清晰、高还原；内置回声消除(AC)功能，互动过程中自动消除远端回声；支持网络远程调试（提供相关功能截图加盖厂家公章）。

3. Built-in digital audio processing module, with adaptive background noise reduction (ANS), automatic gain control (AGC), for high-definition, high-reduction; built-in echo cancellation (AEC) function, automatically eliminate far-end echoes during interaction; support remote debugging (function screenshots affixed with the official seal of the manufacturer shall be provided).

修改为:

**Modified as:**

3.内置数字音频处理模块，具备自适应背景降噪(ANS)、自动增益控制(AGC),实现高清晰、高还原；内置回声消除(AC)功能，互动过程中自动消除远端回声；支持网络远程调试。

3. Built-in digital audio processing module, with adaptive background noise reduction



(ANS), automatic gain control (AGC), for high-definition, high-reduction; built-in echo cancellation (AEC) function, automatically eliminate far-end echoes during interaction; support remote debugging.

**序号：191：直录播系统**

**S.N.:191: Live and playback system**

**原规定：**

**Original:**

6.具有公网 CDN 直播推送，支持公网视频平台进行直播对接，支持平台数量 $\geq 3$  个，进行活动视频的大规模直播（提供功能界面截图加盖厂家公章）；

6. It supports public network CDN live broadcast push, live streaming on public network video platform, the number of platforms  $\geq 3$ , and large-scale live broadcast of event videos (screenshots of functional interfaces affixed with the official seal of the manufacturer shall be provided);

**修改为：**

**Modified as:**

6.具有公网 CDN 直播推送，支持公网视频平台进行直播对接，支持平台数量 $\geq 3$  个，进行活动视频的大规模直播；

6. It supports public network CDN live broadcast push, live streaming on public network video platform, the number of platforms  $\geq 3$ , and large-scale live broadcast of event videos;

**序号：192 ：教师 3D 跟踪探测器**

**S.N.: 192: Teacher 3D tracking detector**

**原规定：**

**Original:**

1.要求传感器能够对可视范围内所有人、物等目标自动追踪，精准标定人、物等目标的三维坐标；(提供截图证明加盖厂家公章)



1. It is required that the sensor can automatically track all people, objects within the visible range, and accurately calibrate the three-dimensional coordinates of people and objects; (screenshots affixed with the official seal of the manufacturer shall be provided)

修改为:

**Modified as:**

1.要求传感器能够对可视范围内所有人、物等目标自动追踪,精准标定人、物等目标的三维坐标;

1. It is required that the sensor can automatically track all people, objects within the visible range, and accurately calibrate the three-dimensional coordinates of people and objects;

序号: 199: 智慧课堂系统软件

**S.N.: 199: Smart classroom system software**

原规定:

**Original:**

二、资源调用(满足但不限于下述功能)

1.课程资源:教师在备课系统中完成了课程建设,课堂系统可实现与其课程的完整对接,包含课程章节内容、作业模块、考试模块、资料模块、学生管理等内容。老师在课堂中,可以随时调用备课系统平台中事先准备好的内容,实现课前、课中、课后的连贯性;(需提供截图证明加盖软件生产厂商公章)

**II. Resource utilization (meet but not limited to the following requirements)**

1. Course resources: Teachers have completed the course construction in the lesson preparation system, and the classroom system is matched up with their courses, including course chapter content, homework modules, exam modules, data modules, and student management. In the classroom, teacher can use the pre-prepared content in the lesson preparation system platform at any time for coherence before, during and after class; (proof of screenshots affixed with the official seal of the software manufacturer shall be provided)

修改为:



**Modified as:**

二、资源调用（满足但不限于下述功能）

教师在备课系统中完成了课程建设，课堂系统可实现与其课程的完整对接，包含课程章节内容、作业模块、考试模块、资料模块、学生管理等内容。老师在课堂中，可以随时调用备课系统平台中事先准备好的内容，实现课前、课中、课后的连贯性；

**II. Resource utilization (meet but not limited to the following requirements)**

1. Course resources: Teachers have completed the course construction in the lesson preparation system, and the classroom system is matched up with their courses, including course chapter content, homework modules, exam modules, data modules, and student management. In the classroom, teacher can use the pre-prepared content in the lesson preparation system platform at any time for coherence before, during and after class;

**序号：202：广播级室内云台**

**S.N.: 202: Broadcast level indoor PTZ**

**原规定：**

**Original:**

7.为了证明是原厂支持和满足摄像机控制功能需要，必须提供产品原厂质保函、原厂售后服务承诺函、CE 报告、ROHS 报告。

7. In order to prove that the original factory supports and meets the needs of the camera control function, the original product warranty letter, the original factory after-sales service commitment letter, the CE report, and the ROHS report must be provided.

**修改为：**

**Modified as:**

7.为了证明是原厂支持和满足摄像机控制功能需要，必须提供原厂售后服务承诺函。

7. In order to prove that the original factory supports and meets the needs of the camera control function, the original factory after-sales service commitment letter must be provided.

**序号：205： LED 小间距**



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**S.N.: 205: LED small spacing**

原规定:

**Original:**

**三、控制系统**

5.含配电柜，显示屏结构及拼接控制器等；全前维护；前散热；面积根据 300 座教室尺寸进行匹配

**III. Control system**

5. With power distribution cabinet, display screen structure and splicing controller; full front maintenance; front heat dissipation; the area is matched with 300-seat classroom.

修改为:

**Modified as:**

**三、控制系统**

5.含配电柜，显示屏结构及拼接控制器等；全前维护；前散热；面积根据 300 座教室尺寸进行匹配（不小于 20 平方米）。

**III. Control system**

5. With power distribution cabinet, display screen structure and splicing controller; full front maintenance; front heat dissipation; the area is matched with 300-seat classroom.  
(Not less than 20 square meters)



中信国际招标有限公司

CITIC INTERNATIONAL TENDERING CO., LTD.

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本文件共 209 页。请收到此文件的投标人在回执栏签字盖章并务必于 2023 年 9 月 26 日下午 17:00 前将签字盖章后的回执页发至扫描后发至以下邮箱：

This document consists of 209 pages. The bidder receiving this amendment shall sign and seal in the receipt column, and must send the signed and sealed the receipt page to the following fax or email before 17:00 p.m. on September 26<sup>th</sup>, 2023.

联系人/Contact: 顾星宇/Gu Xingyu

邮箱/Email: [guxy@biddingcitic.com](mailto:guxy@biddingcitic.com)

电话/Tel: 010-68945249/+86 10 68945249

传真/Fax: 010-68940233/+86 10 68940233

中信国际招标有限公司

CITIC International Tendering Co., Ltd.

2023 年 9 月 25 日

September 25<sup>th</sup>, 2023



回 执

**Acknowledgement of Receipt**

我方确认收到“滇西科技师范学院利用以色列政府贷款购置应用型教育实验实训设备建设项目（第一包：教务处、智能与信息工程学院、管理与经济学院设备采购）（重新招标）”澄清（一）和补遗（十二），招标编号：0733-225122263676/01（重新招标），共 209 页。

We confirm our receipt of Clarification (I) & Amendment (XII) of the Project “West Yunnan University Construction Project of Application-Oriented Educational Experimental Training Equipment Procurement Utilizing Israeli Government Loan (Package 01: Procurement of Equipment for the Academic Affairs Office, Faculty of Intelligent and Information Engineering, Faculty of Management and Economics) (Re-Bidding)” (Bid No.: 0733-225122263676/01) (Re-Bidding), 209 pages in total.

投标人名称 Bidder's Name:

签字 Signature:

公章 Official Seal:

日期 Date: