Test Project

试题

Generic Competitor pre-competition information

选手赛前通用信息

*Iniformation Network Cabling*

*信息网络布线*

WSC2024\_TP02\_pre\_en

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本文档规定了选手应遵循的准则，包括在信息网络布线项目比赛期间有效的安装标准。

This document provides the rules that Competitors shall follow, including the installation standard effective during the Information Network Cabling competition.

对于本文未描述的项目，选手必须自行确定或按照2024年比赛试题(以下简称TP)中给出的要求进行。

As for items not described here, Competitors must determine by themselves or follow the relevant method described in the Test Project 2024, hereafter abbreviated as the TP.

## Competition Guideline比赛指南

1.比赛指南将在比赛前公布。

The competition guideline will be published prior to the competition.

选手必须在比赛前充分了解规则。

Competitors must fully understand the guideline before the competition.

2.该指南包括:

The guideline includes:

a.选手指南(本文件)，b.试题场景，c.施工标准规范。

a. Competitors guideline (this document), b. Test Project scenario, c. construction standard specification.

3.在比赛过程中，必须遵守选手指南。

During the competition, this competitor’s guideline must be observed.

4.如果不同文件之间描述有冲突，应按以下文件顺序操作:

If any conflicting instruction is found among different documents, the following priority shall be applied:

a.(上位文件)技术说明，b.试题，c.本指南，d.(下位文件)其他指南。

a. (Higher) Teechnical Description, b. Test Project, c. this guideline, d. (Lower) other guidelines.

**General requirements总体要求**

5.所需材料和系统的安装应按照以下文件进行:

Installation of the required materials and systems shall be performed in accordance with the following documents :

•试题,

• TPs,

•ISO/IEC标准，特别是ISO/IEC 11801- 1,14763 -2和14763-3，

• ISO/IEC standard, especially ISO/IEC 11801-1, 14763-2 and 14763-3,

•提前发放的供应商手册;

• pre-distributed manufactures’ instruction manual,

•供应商培训师在熟悉日C-2时给出的解释;

• Explanation given by a trainer of the manufacture(s) during familiarization C-2,

•技能管理团队(SMT)的指导，如有。

• Instruction given by Skill Management Team (SMT), if any.

•选手收到的其他文件。

• Other documents which Competitors have received.

•※上述内容没有优先顺序。

• ※Above a to f are not in particular order to follow.

1. TP中的安装方法和程序只适用于实际安装工作环境的所采用的方法。不接受任何只适用于比赛的安装方法。

The TP shall be completed only by installation methods and procedures intended to apply to the actual installation work environment.Any installation method that would only work in the competition as a general rule is not acceptable.

## **Usage of tools and equipment工具和设备使用**

7.除技术说明第8.3节规定的工具、设备或夹具以外，不要携带和使用其它任何工具、设备或夹具，或您自己的工具箱。

Do not bring in and use any tools, equipment, or jigs other than those specified in Section 8.3 of Technical Description, or your own toolbox.

8.《技术描述》第8.3节中所列工具的型号和数量未作特别规定。

The models and the quantity of tools listed in section 8.3 of Technical Description are not specified.

即，如果目的相同，那么型号/类型/数量并不重要。

This means that a model/type/quantity won't matter, if the purpose is the same.

9.只有当工具或设备通过工具箱检查时，才允许根据试题更换工具或设备。

Tools or equipment may be replaced depending on the Test Project.However, this is allowed only when the tool or equipment has passed the toolbox check.

10.在一次作业中，不得同时使用两台相同的设备。如，选手不得在同一个模块中使用两台熔接机。

No two identical equipment may be used at the same time during a work.For example, a Competitor must not use two fusion splicers during a given module.

11.比赛期间不得将工作台、工具箱等放置在观众看不到的地方。

No working table, the toolbox etc. must be intentionally placed out of view of visitors during the competition.

12.在比赛过程中，可以请专家帮忙搬运工位的工作台等。

May ask an Expert for help in moving the working table etc. in the work site during the competition.

**Usage of Competitors’room选手室的使用**

13.不用于试题的工具和其他设备可以存放在您自己的储物柜中。

Tools and other equipment not used for the Test Project may be stored in your own locker.

14.休息时间可自由使用选手房间。

Free to use of the Competitors’ room during breaks.

**Replacement of the materials/equipment材料和设备的更换**

15. 如果提供的任何材料/设备损坏，立即通知技能管理团队更换。如果缺少备件且无法更换，则不评分。 If any provided material/equipment are damaged, inform the Skill Management Team immediately to replace it. If replacement is not available due to lack of spare, it may not be marked.

**Entering/exiting the competition site进出赛场**

16.根据负责计时的骨干专家的指示进出工位。

Enter and exit the workstation as instructed by Expert Lead responsible for timekeeping.

没有人未经允许不得进出工位。

No one is allowed to enter or leave the workshop without permission.

17.选手在比赛期间不得离开自己的工位。

Competitors must not leave their own workstation during competition.

18.一旦选手宣布试题完成并离开工位，不得再次进入工位。

Once you have declared the Test Project complete and left the workstation, Competitors may not re-enter.

**Handling documents of competition比赛文件发放**

19.包括试题在内的所有文档将以PDF文件的形式在平板电脑中发放。

All documents including Test Project will be distributed as PDF files in the tablet.

因此，选手不接触纸质文件。

Therefore, Competitors do not handle paper documents.

20.所有文件，包括翻译版本，将嵌入SMT的授权签名。

All documents, including translated versions, will be embedded with SMT's authorized signature.

21.提前分发的文件，如手册和材料，可以带到现场，在比赛期间可以查看。包括经过SMT批准的翻译版本。

Documents distributed in advance, such as manuals and materials, can be brought to the site and these can be viewed during the competition.These can be translated versions approved by SMT.

22.任何时候都不允许将TP文件带出工位。

It is not allowed to take the TP handouts out of the worksite at any time.

比赛结束后，发放的文件必须放在指定的文件夹中。

When the competition is over, the handouts must be placed in the indicated folder.

**Extension of competition time延长比赛时间**

23.在下列情况下，经计时员和SMT同意，可以稍微延长比赛时间。

Slight extension of the competition time may be granted by agreement between the timekeeping officer and the SMT in the following cases.

•出现安全与健康的问题;

• HSE issue arises,

•在工具清单中发现了问题等;

• Inadequacies etc. was found in the Infrastructure List,

•在试题中发现了问题等;

• Inadequacies etc. was found in the Test Project,

•出现了严重的问题，

• A serious trouble arises,

•SMT特别认证的事项。

• Specially accredited by SMT.

**Familiarization time C-2熟悉日**

24.在熟悉过程中，可以完成以下任务:

During familiarization time, the following tasks can be worked:

•从袋子或箱子中取出所有材料和设备;

• take out all the materials and equipment from bags or boxes,

•确认配送物料的数量和质量;

• confirm quantity and quality of the distributed materials,

•练习指定材料安装;

• practice specified materials installation,

•在TP上练习设备安装和安装方法;

• practice equipment installation and installation method on the TP,

•确认设备的功能;

• confirm functionality of equipment,

•练习使用工具和设备;

• practice using tools and equipment,

•练习Wi-Fi相关设备的配置。

• practice configuration of Wi-Fi related devices.

25.用于熟悉的耗材是有限的;

Consumable materials for familiarization are limited;

不要使用试题要求的材料。

do not use Test Project materials.

26.可在C-2及C-1的指定表格上做笔记。该指定表格也可在比赛中用作参考。但是，笔记本也是电子版的。

Handwritten notes may be taken on the designated form in C-2 and C-1.It may also be referred to during the competition.However, the notebook is a digital document.

27.请注意，每个模块开始前的“准备时间”是有限的。

Be aware that the "preparation time" given before the start of each module is limited.

**Preparation Time准备时间**

28.准备时间是指在每个试题模块开始前为比赛做准备的时间。

Preparation time is a time given before the start of each Test Project module to prepare for the competition.

29.在准备时间内，可以完成以下任务:

In the preparation time, the following tasks can be worked:

•拆分和整理材料，方便工作;

• separate and sort out the materials to make it easier to work,

•从袋子或箱子中取出所有材料和设备;

• take out all the materials and equipment from bags or boxes,

•确认配送物料的数量和质量。

• confirm quantity and quality of the distributed materials.

**30.以下任务不能在准备时间进行:**

The following tasks must not be worked:

•安装将使用的材料的任何配件。

• install any of the accessories of the materials which will be used.

如有例外情况，将在培训期间通知。

Exception(s), if any, will be notified during the training,

•切断任何线缆和胶带;

• cut any cables and tapes,

•打标签或放置任何易于识别的标记;

• label or put any mark to make it distinguishable,

•校准指定设备以外的设备。

• calibration of equipment other than designated equipment.

**Before the competition赛前**

31.除了平板电脑、电脑、经过批准的文件、手表和文具外，不要在办公桌上放置任何东西。

Do not place anything on the work desk except tablets and PC, approved documents, watches, and stationery.

32.选手必须在比赛开始前15分钟到达自己的工位。

Competitors must be at own workstation 15 minutes prior to the start of the competition.

**Questions问题**

33.如果选手有任何问题，他们可以向专家寻求帮助。

If a Competitor has any question, they can ask Experts for help.

至少会有两位专家及时解决问题。(非选手的同国专家)

There will be at least two Experts to solve the problem in a timely manner。

(Not the compatriot Expert of the Competitor.)

34.如果试题和/或材料出现问题，经SMT同意可以延长比赛时间。

If the question is identified to be related to a defect in the Test Project and/or a defect in materials, the competition time may be extended upon the SMT’s request.

**Completion of Test Project完成试题**

35.试题完成后，必须在指定的线上系统中进行报告。

When the Test Project is completed, it must be reported in the specified online system.

36.比赛结束时满足试题的“功能性”要求。

he end of the competition satisfies the qualification of the “functionality” of each Test Project.

因此，选手必须在规定时间内完成所有的连接，端接，布线和测量。

Therefore, the Competitor must have finished all the connections, terminations, cabling, and

measurements by the time.

如果试题的要求有特殊规定，那么即使选手没有报告所有的细节，只要报告了一些不完整的内容，试题也会被认为是完成了的。However, if specified in the Test Project, reporting incomplete details may be considered completion of the Test Project.

37.在比赛完成之前，必须完成以下任务:

Before the competition is completed, the following tasks must be done:

保持工具和设备的有序;

• keeping tools and equipment in order,

•清洁工位;

• cleaning the workstation,

•按照规定的规章制度对垃圾和工业废物进行分类。

• separating garbage and industrial waste according to specified rules and regulations.

•所需时间也包括在比赛时间内。

• The time required for this is also included in the competition time.

**Safety安全**

38.工作时要把安全放在第一位。

Safety should be the priority when working.

39.一旦发生意外，停止工作。

In case of an accident, stop the work.

40.必须努力防止事故的发生。

Efforts must be made to prevent accidents from occurring.

41.必须符合《技术说明》第7节的规定。

Must comply with the rules of section 7 in Technical Description.

42.保持工位整洁。

Keep the workstation clean and tidy.

请勿将工具放置在高处，以免发生意外事故。

Do not place any tools in high places, to avoid any possible accident.

43.请小心不要碰到桥架、机柜门等尖锐物体。

Do not collide against sharp objects, such as the cable rack and the door of the cabinet.

44.不要在梯子顶板上工作。

Do not work on the stepladder top board.

45.禁止在梯子上放置工具或设备。

Do not place tools or equipment on the stepladder.

46.如果选手需要，可以使用各种形式的手套和防护装备。

46.Various forms of gloves and protective equipment may be used if needed by the Competitor.

**Cabling and Installation布线和安装**

47.线缆必须符合试题中规定的长度。

Cables must be of the length specified in the Test Project.

48.所有的线缆都需要相应的套管。

All cables need slacks respectively.

余长的长度必须由每位选手自行设计，除非另有规定。

The length of the slack must be designed by each Competitor, unless otherwise specified.

49.布线和安装必须考虑到今后的可维护性和可持续性。

Cabling and installation must be done with consideration on later maintainability and sustainability.

50.光纤的弯曲半径不应大于30mm，除非另有规定。

Optical fiber’s bending radius must be more than 30 mm, unless otherwise specified.

51.铜线的针脚分配必须遵循线缆使用规定的方法(T568A或T568B)。

Copper cable’s pin assignment must follow the specified method for the cables to use (T568A or T568B) .

选手必须选择合适的方法使用线缆。

Competitors must choose an appropriate method for the cable to use.

52.光纤的色序必须符合供应商的规格参数。

The colour code for optical fibre cable must conform to the manufacture's specification.

53.每个标示必须根据标签指南2024进行。此外，标签(一个或多个)必须连接在设备或材料的主体上方便识别，并且至少在一个可视角度被看到。

Each indication must be made according to the labeling guidelinet\_2024.In addition, the label(s)must be attached to the main body of a device or a material for identification, and in at least one of the positions easily viewed from accessible directions.

标签必须以可读的方式书写。

The labels must be written in a readable manner.

54.所有安装的线缆不得与其他材料(包括线缆和功能)发生干扰。

All installed cables must not b interfere with any other materials including cables and functions.

55.安装时必须正确使用所有材料和设备。

All provided materials and equipment must be properly used in installing.

56.连接图必须以规定的格式详细说明所有指定的信息。

Connection drawings must detail all specified information in the prescribed format.

连接图不得与实际安装情况有差异。

They shall not differ from the actual installation conditions.

57.必须按照要求或按照试题的指示安装粘合基础设施。

Bonding infrastructure must be installed as required or as instructed by the Test Project.

58.如接线盒或配线架临时安装在连接它的指定位置，引入线缆后，可拆卸一次再安装在其他位置。但必须接近实际安装地点。

The connection box or panel is temporarily installed at the designated place where it is attached, and after the cable is introduced, it can be removed once and installed at/to another place.However, it must be close to the actual installation site.

59.在切割尾纤和其他线缆的多余长度、清理涂层时，必须考虑其可维护性和可持续性。

When cutting the extra length and coating of pigtail cords and other cables, and removing their coatings, maintainability and sustainability must betaken into consideration.

与未剪掉多余长度的工作相比，剪掉多余长度的工作一定会使施工工作变得更难。

Cutting off the extra length must not make construction work significantly easier, compared to the work with the extra length kept uncut.

60.光纤熔接的保护管必须充分加热，且熔接点必须在保护管的中心。

The sleeve to protect the fusion splice of the optical fiber must be sufficiently heated and the spliced point must be at the center of the sleeve.

61.如有必要，所有线缆应以适当的间隔固定在机架等上。

If necessary, all cables shall be fixed to racks, etc. at appropriate intervals.

62.不同系统的不同线缆必须在桥架上分开捆扎。

Different cables with different systems must be tied up separately on the cable tray.

63.在线缆最终将被固定或端接的地方必须做好管理。

The cable must be managed where it will eventually be fixed or terminated.

**Installation process安装过程**

64.不得在工作期间故意让观众/专家看不见操作过程。

The work/operation must not be intentionally hidden from visitors/Experts during the work.

65.选手必须清晰地展示其安装的质量和准确性。

Competitors must clearly demonstrate their quality and accuracy in installation.

同时，必须考虑可维护性和可持续性。

At the same time, maintainability and sustainability must be considered.

66.为了保证安装质量和开发新的安装方法，需要考虑和实施各种安装方法。

Various installation methods should be considered and implemented to ensure installation quality and to develop new installation methods.

67.经过技能管理团队批准后，在过去的比赛中获得认证的安装方法可以在本次比赛中实施

Installation methods that have been certified in past competitions may be implemented in this competition.

However, prior approval by the Skill Management Team is required.

68.只有梯子可以用作脚手架。

Only stepladders may be used as scaffolds.

69.除专为放置熔接器而设计的熔接器工具箱外，请勿在工具箱或椅子上操作设备或工具。

Do not work with equipment or tools on a toolbox or chair with exception to a fusion splicer toolbox which is design for placing fusion splicer.

70.请勿将产品、配件或工具直接放在地面上。

Do not leave products, accessories, or tools on the ground directly.

71.工作必须按照行业标准进行，如:线缆在端接前必须进行管理。选手不允许端接配线架后再做桥架上的线缆管理。

The work must be performed in accordance with industrial standards, such provision as: cables must be managed before termination.Competitors are not allowed to terminate the panel, and then,manage the cable on the cable tray.

72.在一次操作中可以同时拉的最大线缆数是6根。

The maximum number of cables that can be pull simultaneously in one operation is six.

73.如果选手在将线缆从线缆盒中拔出时不能确定现场布线所需的线缆长度，则不能立即切断从线缆盒中拔出的线缆。

If a Competitor does not know the cable length required in field cabling at the time of pulling out the cable out of the cable box, they cannot cutoff the cable coming out of the cable box on the spot.

选手必须先将线缆放在桥架上，然后测量后再剪切。

The Competitor must put the cable on the cable rack first, and then, measure before cutting it.

74.布线方法必须是“方法A”或“方法B”。

The cabling method must be either “Method A” or “Method B “ .

75.线缆在端接或连接之前不能做完整管理。

The cable(s) must not be fully managed before termination or connection.

76.线缆必须先放上桥架，然后进行管理。

Cables must be put on the cable rack first, and then, managed afterwards.

选手不得在地板上管理线缆，稍后再铺设在桥架上。

Competitors are not allowed to manage the cable on the floor to lay on the cable tray later.

77.如果需要安装多个TO，必须先安装完成一个TO后，才能安装另一个TO。

If several telecommunication outlets1 (TOs) are to be installed, one TO outlet must first be installed and completed before another TO can be installed.

78.连接光纤连接器时，必须清洁连接器端面。

When connecting fiber connectors, connector end faces must be cleaned.

79.必须使用含酒精的无尘布至少清洁三次光纤。

Fibers must be cleaned at least three times using wipes with ethyl alcohol.

每次必须使用新的无尘布。

A new wipe must be used each time.

80.当使用柔性管道布线时，必须使用穿线器将线缆路由到TO。

When using a flexible duct for cabling, fish tape must be used to route the cable to telecommunications outlets.

柔性管道内的线缆应使用穿线器。

Cabling in flexible ducts shall be routed using fish tape.

**Measurement Test测量测试**

81.每种测量测试方法必须按照单独发布的“2024年测量方法指南”进行”。

Each measurement test method must be conducted in accordance with "Measuring method

guideline 2024," which will be handed out separately.

此外，每次测量测试的结果必须保存到测量设备中。

In addition, the result of each measurement test must be saved to the measurement equipment.

82.光纤布线的测试应基于ISO/IEC 14763-3。

Testing of optical fiber cabling should be based on ISO/IEC 14763-3.

83.测量设备必须在比赛时间内校准，然后进行测量。

The measuring devices must be calibrated during the competition time before the measurement.

84.如果使用DSX进行测量，专家必须在场。

If the DSX is used for measurement, the Expert must be present.

当选手是为了自行确认进行测试，例如Wire-map测试和可视光检查时，则不适用此要求。

This obligation is not applied when a competitor conducts a test by him/herself for self-confirmation purposes, such as Wire-map test and visible check.

85.测量应按标准等正确进行。

The measurement shall be performed correctly according to the standards, etc.

选手必须特别注意以下几点:

Competitors must pay attention especially to the followings:

•选择信道或永久链路xTP链路测量，

• selection of Channel or Permanent linkin xTP link measurement,

•测量光链路波长，选择跳线方法，清洗光耦合器。

• wavelength in optical link measurement, selection of jumper method, cleaning of optical connector.

86.铜通道测试必须使用DSX8000和/或线图测试仪进行。

Copper channel test must be carried out using DSX8000 and/or Wire-map tester.

87.光纤通道测试必须使用DSX8000进行。

Fiber channel test must be performed using the DSX8000 .

88.可见检查器可用于所有模块。

Visible checker can be used in all modules.

89.测量结果必须在线上进行报告。

Measurement results must be reported online.