



2026

BRICS SKILLS COMPETITION

(BRICS+ FUTURE SKILLS & TECH CHALLENGE)

Building Information Modelling BIM

BRICS-FS-06

Technical Description

(International Final_Offline)

June, 2026



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1 Project Overview

1.1 Item description

1.1.1 Name of the Skills Competition

The BRICS National Vocational Skills Competition – Building Information Modeling (BIM) event, abbreviated as the BIM competition.

1.1.2 Skill Competition Description

The 2026 BRICS Vocational Skills Competition's Building Information Modeling (BIM) event is a two-person skill competition where participants collaborate to complete tasks covering architectural design, detailed design, and engineering management. The competition consists of two main components: creating standardized BIM models and analyzing and applying these models. It assesses students' abilities in reading drawings, performing custom modeling, and coordinating across multiple disciplines to develop BIM models, as well as using these models for process simulation, detailed design, and construction site layout planning. Participants are also required to generate construction drawings from optimized BIM models, calculate quantities of work, and create animations.

The competition features uniformly designed questions based on specific engineering project cases, with tasks developed from provided fundamental engineering data. Its objectives are to facilitate demonstration, exchange, learning, and professional development; it integrates industry demands with talent cultivation in vocational institutions while adhering to principles of openness, fairness, and

impartiality, ensuring that industry standards and corporate requirements are seamlessly aligned with educational objectives.

The competition covers a wide range of professional roles across various industries, including construction engineering technicians, management engineering technicians, business professionals, and construction cost estimators. It focuses on the core aspects of project management leveraging BIM technology, encompassing key areas such as BIM model creation, BIM-based construction organization design, BIM-driven schedule management, cost control, and quality/safety management, while integrating essential professional skills and knowledge in engineering project management, construction organization design, cost estimation, and construction engineering technology.

Through this competition, vocational colleges can align their talent cultivation programs, curriculum design, course standards, practical teaching, and training base development with industry standards in a targeted manner. By basing course standards on industry norms and workforce demands, they will establish application-oriented talent development criteria tailored to the needs of modern construction enterprises.

The competition platform utilizes mature and widely adopted industry-specific hardware and software, supported by internationally standardized technical frameworks, building upon the successful experience of the previous BRICS Vocational Skills Competition to ensure reliable and fair event operations.

1.2 Competition Objective

This competition proactively addresses the growing demand for technical and

skilled professionals driven by the transformation of economic development models and industrial upgrading in the new era. It aligns closely with higher education's focus on cultivating highly skilled talents proficient in innovative technologies, processes, and methodologies, effectively guiding vocational institutions to enhance their specialized education and teaching reforms while strengthening their capacity to develop skilled personnel. Through competitive demonstrations, the event aims to improve students' BIM modeling skills, familiarize them with relevant software applications, and enhance both teachers' and students' ability to create comprehensive BIM physical models—enabling swift application of these models in real-world projects and practical work scenarios. Ultimately, it achieves the goal of "promoting teaching and learning through competition," fostering active engagement among educators and learners in architectural technology studies, elevating expertise in building modularization and digitalization, advancing the transformation and upgrading of the construction industry, and fully realizing the competition's mission: "rooted in teaching yet transcending it, and leading educational innovation."

(1) The BIM Application Skills Competition serves as a vital platform for promoting the widespread adoption of BIM in educational institutions and accelerating the cultivation of talent in building informatization, while also providing students with a practical platform to learn and apply BIM technologies.

(2) Accelerate the development of professional expertise and enhance core competitiveness. As an emerging information technology in the construction industry, BIM enables higher education institutions to adopt BIM-related initiatives through organized BIM application skills competitions. This not only fosters the cultivation of

dual-qualified faculty teams but also facilitates effective integration of industry-academia-research collaboration, thereby driving teaching innovation, curriculum reform, faculty enhancement, and the cultivation of applied professionals.

(3) This competition provides students with a platform to showcase their skills and paves the way for their growth, development, and success. By leveraging BIM software solutions and drawing on real-world engineering cases, it closely simulates actual work environments, fosters collaboration among architecture-related majors in universities, enhances students' core professional competencies, and strengthens their practical and innovative abilities.

1.3 Contest Participants

No specific competition categories are specified. All eligible participants—including students and faculty members from vocational colleges (including higher vocational institutions and technical schools) as well as undergraduate universities, along with employees of enterprises and public institutions—must be aged between 16 (born before January 1, 2010) and 35 (born after January 1, 1991).

Any athlete who has previously won first place in any event of the BRICS Professional Competition is not eligible to compete in the same event at the 2026 BRICS Professional Competition as an athlete.

2 The skills that contestants must possess:

This technical specification defines the knowledge, understanding, and specific

skills required of BIM professionals, representing international best practices in both technical and professional performance. It reflects the consensus among BRICS countries regarding the demands for BIM-related roles and responsibilities.

This standard specification serves as a guide for the training and preparatory work required for skills competitions.

This standard is divided into distinct sections, each accompanied by titles and reference numbers. Each section is assigned a percentage of the total score to indicate its relative importance within the standard—this is commonly referred to as "weight." The sum of all percentage scores equals 100. Weights determine how points are distributed across the scoring system.

The evaluation criteria should solely assess the knowledge points specified in the standard specifications. Under the constraints of skills competitions, the competition questions should comprehensively reflect the content of these skill standards as much as possible. The competition skill standards are detailed in Table 1.

Table 1: Competition Skill Standards

Subitem		Relative materiality (%)
1	Work Organization Structure and Project Setup	5
	Participants must understand and grasp the following: – Various Applications of BIM Modeling – The components of the basic framework for BIM standards – The currently adopted and recognized standards (ISO 19650-1, ISO 19650-2, GB/T 51212, GB/T 51235, GB/T 51269, GB/T 51301, and JGJ/T 448). – Current health and safety regulations – Technical Terms and Symbols – Recognized IT systems and related professional design software – The information must convey the design intent with sufficient accuracy and clarity. – The Importance of Effective Communication and Interpersonal Skills – The importance of continuous learning and skill updating amid the rapid iteration of new technologies – The role of providing innovative and creative solutions to the problems and challenges encountered during project implementation. – The significant impact of BEP (BIM Implementation Plan) on deliverables and timelines – The Importance of Work Briefings for Customers	
	Participants should be able to: – Apply internationally recognized standards (ISO 19650-1 and ISO 19650-2), domestic standards (GB/T 51212, GB/T 51235, GB/T 51269, and GB/T 51301), as well as the nationally approved standard (JGJ/T 448). – Access and identify the code library for standard components – Use and interpret technical terms and symbols employed to prepare and present information models, structures, and architectural drawings. – Continuously deliver high-quality designs and presentations using standard IT systems and specialized design software. – Coordinate and resolve issues – Through effective communication with team members, ensure the modeling process meets BEP's relevant requirements. – Explain the role and purpose of BIM to team members and other participants in the competition. – Explain complex technical issues to both experts and non-experts – Provide creative solutions to the problems and challenges encountered during the design process. – Provide a series of visualizations to accurately complete the presentation	

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subitem		relative materiality (%)
2	Modeling Software and Modeling Environment	5
	Participants must understand and grasp the following: – Computer Operating System – Peripheral devices used during the digital construction process – Specific technical operations required within design software – Workflow for Digital Construction Projects – Limitations of Design Software – File Format	
	Participants should be able to: – Start the device and activate the modeling software – Set up and check peripheral devices – Use computer operating systems and specialized software to efficiently create, manage, and store files for BIM projects in both local and shared data environments. – Select the correct graphics package from the screen menu or graphics menu – Enable and use BIM software in multiple ways – Configure software parameters	
3	Understanding of the design proposal	10
	Participants must understand and grasp the following: – The information provided in the exam question – The Importance of EIR – The Importance of AIR – Relevant and current industry standards – How to Work Based on BEP – How to create and edit BIM information throughout the CDE phase of the entire construction lifecycle – The importance of file structure and sharing protocols in the CDE	
	Participants should be able to: – Explain the design proposal summary to determine: - The objectives and requirements for each project; - Customer Goals; - Project Location – Work according to the BEP, briefing, and EIR to meet the requirements of the test questions.	
subitem		relative materiality (%)
4	Model Creation	50
	Participants must understand and grasp the following: – Software used in modeling and collaboration processes – Relevant modeling software – Methods for categorizing model elements by profession – How to manage project information visually – How to Create a Model (Structure and Architecture) – Principles of Technical Design – How to Access and Use Documents in a BIM Project – How to Set the Model as a Collaborative File – How to set project location, orientation, and horizontal reference line – How to create a WIP folder directory	

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	– The importance of information exchange during critical stages of a project – How to Create a Model Based on Standards – How to Use 3D Visualization Tools	
	Participants should be able to: – Open an appropriate project information model from the relevant directory in CDE – Fill in item attributes using the given information – Set the model as a collaborative file – Set the project's location, orientation, and horizontal reference line – Create axis grids for the structural and architectural disciplines. – Create a model from the given drawings – Save the model in the specified view – Save all project information models in CDE to enable other professionals to access and use them via the cloud platform – Follow BEP requirements to ensure data sharing – Use the Cloud Platform – Output the standard drawing as required – Create 3D visual effects to highlight the features of each building	
	subitem	relative materiality (%)
5	Model Coordination	10
	Participants must understand and grasp the following: – How to integrate BIM models from different disciplines – How to perform a collision check – How to upload and save a collision report as required – How to perform and record a collision check	
	Participants should be able to: – Capable of integrating or dividing multi-disciplinary BIM models – Perform collision detection according to BEP – Export all models from BEP and save them to CDE – After professional collaboration according to BEP standards, integrate and submit the model – Identify issues in the integrated project model through Model Exploration – You can configure collision parameters, perform collision checks, and create collision reports for identified issues. – Add a comment for this issue – Assign this issue to the corresponding BIM project manager – Name the chart file based on BEP	
6	Model Calibration	5
	Participants must understand and grasp the following: – How to modify the model – How to generate drawings using structural and architectural models	
	Participants should be able to: – Update the project information model according to the newly released document – Ensure all projects are filled with the required data according to the latest standards – Add classification information to the model based on BEP – Export floor plans, detail drawings, and elevations from the modified	

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	model – Use a BIM model to generate detailed drawings for complex structural nodes.	
7	Data Extraction and Management	5
	Participants must understand and grasp the following: – How to Extract Project Data from a BIM Model – How to create a shared parameter file for custom data requirements – How to use custom data fields to create project information – How to use filters and parameters to visually represent custom data requirements	
	Participants should be able to: – Create a shared parameter file with custom parameters for the selected architectural elements – Create filters to visually represent custom parameter information on complex planes, cross-sections, and 3D cut surfaces. – Create project information including custom parameters	
subitem		relative materiality (%)
8	Model Visualization	5
	Participants must understand and grasp the following: – How to generate render images using a BIM model – How to generate rendering animations using a BIM model – How to use Combinations, Backgrounds, and other software to provide customers with more realistic model presentations – The impact of the sun's motion trajectory and timing on the model	
	Participants should be able to: – Use appropriate software to create a comprehensive project information model with accurate elevation data for display purposes, including images, animated videos, and VR models. – Use composition, lighting, and background techniques to achieve optimal visual effects. – Add personnel information and other components from the material library	
9	Model Deepening	5
	Participants must understand and grasp the following: – Preparation of the Construction Plan – File Format Conversion – Importing and exporting files in different formats	
	Participants should be able to: – Export files in various formats using BIM software – You can use BIM software to simulate construction plans. – Use BIM software to visualize complex and challenging construction processes. – Back up project files	

3 competitive event

3.1 Competition Module

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Module		Duration (min)	Score Weight (%):
Module A	Structural Professional Modeling	240	40
Module B	Architectural Modeling	210	35
Module C	construction management plan	120	25
amount to		570	100

3.2 Module Overview

Module Number	Submodular	Scope of Work
Module A	CDE	1. Create a folder structure with CDE functionality on the specified local network server. 2. When creating folders, follow ISO 19650-1/2.
	Project Information	1. Create project documents and assign project information according to the drawings. 2. Create floor elevations and assign them to the project drawing file.
	structural modeling	1. Create a project structure model including foundations, columns, beams, walls, slabs, and stairs. 2. Generate the drawings as required. 3. Create the quantity detail list.
	Reinforcement deepening	1. Perform reinforcement layout and adjustment for specified structural members, including columns, beams, walls, slabs, stairs, etc.
	Model Output	1. Merge the models, back up the output, and save it to the specified folder.
Module B	Model Link	1. Professional model for link structure.
	Building Modeling	1. Create floor elevations, drawing files, and axis grids. 2. Create professional architectural models for walls, doors, windows, and other structural elements. 3. Generate the drawings as required.
	Model Output	1. Merge the models, back up the output, and save it to the specified folder.
Module C	schedule diagram	1. Complete the progress schedule for each phase in accordance with test requirements and

Module Number	Submodular	Scope of Work
		drawings.
	site layout	1. Conduct site layout according to the provided drawings and site layout specifications. Save as CAD format. 2. Arrange the site model according to the construction site layout diagram. site layout .
	4D Progress Simulation Animation	1. Create a 4D progress simulation animation that includes all construction milestones and sites The site model, and associate components with the site model files based on the construction schedule.
	Construction Process Simulation	1. Create terrain and landforms. 2. Apply human resources, machinery, animation, and process nodes appropriately. 3. Set camera perspective simulation.

3.3 Question Generation Method

The project competition module consists of three independent components that must be integrated to complete a full project. Skills tested across these components may include:

Public Data Environment;

Project Information Model;

structural modeling ;

Building Modeling;

Node Details;

Model Coordination;

Model Calibration;

data fetch ;

site layout ;

4D Progress Simulation;

Construction process simulation;

Animation and photo rendering;

Each module allows combinations of the aforementioned skills, but each must assess distinct abilities.

3.4 Proposition Formulation

Sample test questions will be published on the official website, and the official competition questions will undergo a 30% modification based on these samples.

4 Competition Rules

4.1 Contestant Registration

1. Registration time

Registration begins on May 29 and ends on September 10.

2. Registration Address

Each participating team must select one member to log in to the designated website by September 10 to complete and submit all team registration details (click "2026 BRICS Vocational Skills Competition (BRICS Future Skills and Technology

Challenge)" on the registration page). Only two teams from the same organization may enter each event category.

Designated Registration Platform (Competition Information Service Platform):

<https://www.bricsacademy.org.cn/signup/index3>.

3. Personnel Changes

Once registration is confirmed, participants and their instructors may not be changed arbitrarily. If a participant or instructor is unable to participate during the preparation period for any reason, the university must submit a written explanation at least five working days prior to the commencement of the relevant event; the change will be approved after verification by the competition organizing committee office. If a participant cannot attend the competition due to special circumstances without submitting a change request to the organizing committee and fails to arrive on time, they shall be deemed to have automatically forfeited their eligibility to participate.

4. Each school is responsible for reviewing the eligibility of participating students and retaining copies of relevant supporting documents for future reference. Participants must present valid identification documents such as ID cards or student IDs (or teacher qualification certificates). Those whose identities do not match the recorded information will have their scores and related honors revoked.

4.2 Get familiar with the venue

1. Upon completion of registration, the organizers will arrange for all participating teams to familiarize themselves with the venue in an organized manner.

2. When familiarizing yourself with the venue, strictly refrain from communicating with on-site staff or making unfounded statements that could damage the event's overall reputation.

3. When familiarizing with the venue, all competition regulations must be strictly observed; crowding and loud noise are strictly prohibited to prevent accidents.

4.3 Competition Entry

1. Participants must gather at the designated location 60 minutes before the official competition begins, presenting their competition certificate, valid identification document (ID card or passport), student ID, and teacher qualification certificate. Station numbers will be drawn 30 minutes prior to the event; participants shall enter in the order assigned by their station numbers to complete all preparatory tasks. On-site judges will verify each participant's identity information. Participants may not enter the venue until 15 minutes after the official competition commences and are permitted to leave only within 30 minutes before the event concludes.

2. Except for strictly designated measuring tools or other permitted items, participants are not allowed to bring any paper-based materials, communication devices, storage devices, or similar items into the competition venue; all necessary competition supplies will be provided on site.

3. No internet access is available at the event venue.

4.4 Competition Process

1. Participants entering the competition venue must comply with the unified instructions and directives of the referees. They are required to first inspect all software and hardware equipment used in the event; any issues identified should be reported promptly to the referees.

2. Before competitors enter the competition area, the chief referee must read out the venue rules and regulations to them. Participants may only enter the area with the referee's permission.

3. On-site judges have the authority to inspect and verify any competition credentials or other items brought into the venue by participants.

4. During the competition, participants must not leave their designated stations without authorization, communicate with other contestants, or depart from the venue without permission. In case of any issue, they must raise their hands to signal the referee for assistance; failure to do so will be considered cheating.

5. During the competition, only referees and staff are permitted to enter the venue; all other personnel (including team leaders, instructors, and other participants) may not enter without prior approval from the organizing committee.

6. During the competition, participants must strictly adhere to safety procedures to ensure personal and equipment safety, and comply with the supervision and warnings of on-site referees and technical staff. If a participant causes equipment failure or damage that prevents them from continuing, the chief referee has the authority to terminate the competition. For equipment failures not attributable to the

participant, the chief referee will make a decision based on specific circumstances (including adding extra time or scheduling participation in the final round). If equipment failure is confirmed, the chief referee may award additional time as appropriate.

4.5 Competition Ending

1. Fifteen minutes before the end of the competition, the chief referee reminds participants that the event is nearing conclusion and urges them to prepare accordingly, with data files being archived as required. Upon the sound of the final whistle, the competition is officially declared concluded, and all participants must cease all operations immediately.

2. If a participating team wishes to terminate the competition early, the athlete must raise their hand to signal this to the referee, who will record the termination time. After completing the competition, the team may not perform any further actions.

3. For competitions involving computer programming or drawing tasks, participants must save the required documents as specified in the competition guidelines, avoid shutting down their computers, and refrain from arbitrarily setting passwords on devices. Upon competition completion, contestants must immediately submit all materials—including mobile storage devices containing results, finished workpieces, and competition task sheets. They should also organize competition equipment properly, including resetting moving parts, returning tools, and tidying up personal belongings.

4. Participants are prohibited from removing any competition-related items—including task instructions, drawings, draft paper, or tools—from the venue. They may only leave after obtaining approval from the on-site judges.

5. Contest teams must submit their results in accordance with the competition requirements, and both the judges and participants must sign for confirmation.

4.6 Requirements for Participating in the Civilized Competition

1. No participant may accept interviews related to the competition content from any organization or individual without prior approval from the event organizing committee.

2. No participant may disclose any competition-related information without permission.

3. Any contestant, team leader, or instructor who violates the competition rules will have their participation revoked and be publicly notified.

4. Contestants' appearance and attire must comply with the company's requirements for safe and civilized production practices.

5. All event staff members must wear the official identification cards issued by the organizing committee and maintain a neat appearance.

6. Media personnel must obtain permission from the organizing committee's leadership team before entering the venue and comply with the arrangements and

instructions of on-site staff; they must not interfere with the conduct of the competition.

7. Other matters not covered herein or any unforeseen circumstances shall be interpreted or resolved by the competition organizing committee.

4.7 Organizational Division of Labor, Performance Evaluation, and Publication

1. Organizational Division of Labor

(1) The organizational bodies responsible for managing competition results include the registration committee, judging panel, supervision committee, and arbitration committee.

(2) Registration staff are responsible for taking attendance, registering participants, and verifying identities; these tasks are carried out by personnel from the host institution of each competition event.

(3) The judging panel operates under a "Chief Referee Responsibility System," comprising one chief referee and one deputy chief referee, who are fully responsible for all aspects of competition officiating and management.

(4) Judges are categorized into encrypted judges, on-site judges, and scoring judges based on competition requirements. Encrypted judges are responsible for organizing the drawing of lots for participating teams (contestants) and handling the encryption and decryption of their information. The list of encrypted judges for each event is determined by the regional organizing committee according to event-specific

requirements; judges for the same event must come from different organizations, and they are prohibited from participating in scoring. On-site judges record competition details as required, maintain venue discipline, and evaluate participants' operational standards and safety conditions. Final scoring judges assess participants' skill demonstrations, operational procedures, and competition entries against established event evaluation criteria.

(5) The supervision team is responsible for overseeing the entire work of the judging panel and conducting random inspections and re-verifications of competition results.

(6) The arbitration panel is responsible for accepting written appeals against the judging decisions submitted by team leaders, conducting reconsiderations, and promptly providing feedback on the outcomes.

2. In accordance with the organizing committee's requirements, the performance evaluation and management of participating teams are conducted through a rigorous process.

3. ascertaining the result

The scoring of this project consists of two components: measurement and evaluation. Measurement refers to scores derived from objective data, while evaluation refers to scores based on subjective judgment.

The evaluation system defines four levels, with corresponding fair and consistent assessment scales developed for each level; judgments must be made based on these scales. Detailed guidance criteria (standards) for each item are provided in

proportionally represented formats: text, images, artifacts, or standalone instructions.

Performance falls below industry standards

The performance meets industry standards.

The performance meets and exceeds industry standards in specific aspects.

Performance fully exceeds industry standards and has been rated as excellent.

The evaluation of competition results is conducted under the leadership of the event expert panel and supervision of the oversight committee, comprising two components: process scoring and outcome scoring, with the responsibility resting entirely on the competition judging panel. The specific procedure is as follows.

(1) On-site Evaluation Score

The on-site judges scored the participating teams based on the scoring criteria, evaluating their operational standards and performance during the event. The scores were confirmed by signatures from all participants, judges, and the chief judge.

(2) Result Score

The competition entries submitted by participants will be evaluated and scored according to the respective event's assessment criteria.

(3) Encryption and Decryption

After the chief judge formally submits the scoring results (competition entry numbers) and verifies their accuracy, the encryption judges proceed to decrypt the

data layer by layer under supervision. This event employs reverse decryption. Upon completion of decryption and successful verification against participants' identity information, the encryption judges return the contestants' identification documents, including their competition certificates, to them.

(4) Random inspection and re verification

To ensure the accuracy of score evaluation, the supervisory team shall review the results of all participating teams (or individuals) ranked in the top 30% of the overall competition scores; for the remaining scores, random sampling reviews shall be conducted with a coverage rate of no less than 15%. The supervisory team must promptly notify the chief referee in writing of any errors identified during re-examination, and the chief referee shall correct the scores and sign for confirmation. If the error rate in re-examination or random sampling exceeds 3%, it shall be deemed a non-low-probability event, requiring the judging panel to review all scores.

(5) promulgate

The organizing committee held the closing ceremony to announce the competition results.

4.8 Method of Enforcement

This competition adopts a "combined referee and instructor" evaluation system: each participating team appoints one instructor who, after training, participates in the scoring process. Experts recruited from non-participating institutions or enterprises are responsible for overseeing all aspects of judging and management.

5 Facilities and equipment related to the competition

5.1 Standards for technical platforms related to competitions

The technical platform standards must fully meet the competition's skill requirements and demonstrate tangible competitive achievements.

5.2 Environmental Requirements

No special requirements.

5.3 Equipment list

Designated Software for the Competition				
order number	name	edition	Provider	
1	ALLPLAN	2023	Hangzhou Xiyu Technology Co., Ltd.	
2	BIMPOP	V1.0		
Player Workstation				
Consumables/Tools/Office Supplies (120 workstations/50 teams)				
order number	name	Technical description or a website link containing the technical description	unit	quantity
1	Computer Desk (Double Person Desk)	140x70x75cm	individual	100
2	chair	54x42x77cm	individual	200
3	Computer (including mouse, keyboard, and monitor)	Computer: CPU ≥ i7 13700, RAM ≥ 16 GB, hard drive ≥ 256 GB; GPU: NVIDIA GeForce RTX 2070 or higher; USB ports ≥ 4; dual graphics card	Set	200

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		configuration; Gigabit network interface		
4	16 square millimeter, 3-core cable	For use in circuit board wiring at workstations	Mi	400
5	4-square, 3-core cable	For use in circuit board wiring at workstations	Mi	800
6	distribution box	Includes a leakage circuit breaker, an air switch, and fixed guide rails.	individual	1
7	extension cord	Double-row configuration with 6 holes, featuring 60 workstations	individual	100
8	Network Cable	Six types of unshielded network cables	Box	10
9	digital screen	Used for playing promotional videos and serving as a timing device on the field	Table	6
10	Warning Tape	10 cm yellow-and-black striped PV warning tape, 33 meters per roll	Volume	30
11	Signature Pen (Black)		Branch	200
12	A4 Folder (Cardboard)		individual	200
13	A4 File Organization Cabinet		individual	1
14	Disinfectant wet wipes		box	60
15	Water dispensers (including those used by referees and event organizers)		individual	4
16	Drinking water (including that used by referees and event organizers)		barrel	15
17	Paper cups (including those used by referees and event organizers)		individual	500
18	Drawing Box	For use as work station number	individual	6
20	First Aid Kit		individual	5
order number	Requirements (Description)			
1	The minimum area of a workstation is 12 square meters (4×3 m).			
2	Power supply per workstation: 220V			

3	Power distribution panel with 3 holes and 6 sockets (total of 100 units)	
4	Each workstation provides one network interface (totaling 200).	
Other public amenities at the venue		
order number	Requirements (Description)	
1	The minimum total area is 20 square meters.	
2	Multimedia Projector	
3	Projection Screen	
4	Computer Network Connection (100 Mbit/s)	
5	LED Clock Display Screen	100mmX60mm
6	The competition area is equipped with KT boards.	A3 Landscape
7	horizontal scroll of painting or calligraphy	To be determined according to the requirements of the organizing committee.
8	portable display/exhibition board	Details such as competition categories, company profiles, and competition equipment specifications shall be determined according to the organizing committee's requirements.

6 Competition Guidelines

6.1 Instructions for Participating Teams

1. Contending teams shall participate in all competition events organized by the event organizers.
2. During the competition, team leaders and other participants must not communicate with referees without authorization. Any individual found engaging in fraudulent conduct will have their participation disqualified and their results invalidated.

3. All participants must complete the event evaluation in accordance with the competition rules.

4. For participating teams that impair the fairness or normal conduct of the competition, penalties ranging from warnings and revocation of results to public criticism will be imposed according to the severity of the offense in accordance with the Regulations for the BRICS Skills Development and Technological Innovation Competition. In cases where such actions significantly disrupt the competition proceedings or related activities, the participating institutions or their respective regional education authorities shall be notified to impose administrative or disciplinary sanctions as prescribed by relevant regulations. Matters involving criminal offenses shall be referred to judicial authorities for handling.

6.2 Instructions for Team Leaders of Participating Teams

1. The team leader must attend the pre-race meeting on time and may not be absent without valid reason.

2. The team leader is responsible for organizing the unit's participating teams to take part in various competitions and events.

3. The team leader shall proactively provide comprehensive support services for the participating team and coordinate communication between the team, the event organizing committee, and the host institution.

4. The team leader is responsible for handling appeals: if a participating team believes that equipment, tools, or software violate competition rules; that judgments

or awards are unfair; or that staff members have committed violations, the team leader must submit written appeal materials to the event supervision and arbitration committee within two hours after the conclusion of the event.

5. The team leader shall actively provide education and training to ensure participating teams within their unit engage in sportsmanship, guiding students to approach competition participation appropriately and cooperate fully with event organizers. Participants must strictly follow the established procedures for resolving disputes during competitions and are prohibited from disseminating false information or inappropriate statements through competition-related WeChat or QQ groups.

6.3 Guidance for Instructors:

1. All participating teams shall uphold high ethical standards, follow instructions, comply with referees' decisions, and refrain from any fraudulent conduct. Any team found engaging in fraud will have its participation disqualified, and all awarded rankings will be invalidated.

2. All team leaders must strictly adhere to all competition regulations, strengthen the management of participants, ensure thorough pre-competition preparations, and remind athletes to bring all required competition documents, including identification materials.

3. During the competition, only participants, officiating judges, on-site staff, and approved personnel are permitted to enter the venue; team leaders, instructors, and other individuals are strictly prohibited from entering.

4. If a participating team has any objections to the competition proceedings, its team leader must submit a written report to the event arbitration working group within the specified timeframe.

5. Regarding the arbitration decision on appeals, the team leader must take the lead in complying with and implementing it, while providing proper support to the athletes. Participants shall not cease competition due to appeals or dissatisfaction with the handling decisions; otherwise, such behavior will be deemed as withdrawal.

6. The supervising instructor should promptly review the announcements and details related to each competition category on the official event website, thoroughly study and master the competition rules, technical specifications, and venue requirements for each category, and guide participants in completing all necessary technical and competitive preparations prior to the event.

6.4 Instructions for Participants

1. Once registration is confirmed, participants cannot be changed in principle. If a participant is unable to participate during the preparation phase for any reason, they must submit a written explanation, supplement the roster according to eligibility requirements, and undergo review; once the competition begins, participating teams may not replace contestants (absences are permitted), may not change instructors (instructors' absences are allowed).

2. All participants must strictly adhere to competition rules, operational procedures, and technical standards; ensure personal and equipment safety; comply with referees' supervision and warnings; and compete in a civilized manner.

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3. Contestants must present their identification credentials to enter the competition area and must always wear them during all operations for inspection purposes.

4. Participants may not bring any books or other printed materials into the competition venue (electronic versions of relevant technical documents will be provided by staff). Communication devices and storage devices (e.g., USB drives) are prohibited. Computers and required application software will be provided exclusively for the event.

5. All participating teams shall enter the competition venue within the designated time frame one day prior to the event commencement to familiarize themselves with the environment. Upon entry, venue staff will jointly verify operational conditions and equipment status with the participants; all team members must confirm that all required materials and tools are complete.

6. Do not operate the equipment before receiving the start signal. Complete the competition tasks at designated stations; cheating is strictly prohibited.

7. During the competition, if a team is unable to participate due to serious operational errors or safety incidents, the on-site referee has the authority to suspend its match.

8. Participants shall not leave the venue during the competition. Food, beverages, and other necessities will be provided uniformly by the event organizers. All periods of rest, meal consumption, or restroom use shall be counted within the official competition duration.

9. Any participant who leaves the competition venue early may not return on the same day.

10. To foster a professional work ethic among technical and skilled personnel, participants must ensure that their working environment and equipment arrangement comply with the corporate production 5S principles (organisation, order, cleanliness, tidiness, and standardization). If conditions are excessively dirty or disorganized, judges reserve the right to impose point deductions as appropriate.

11. In the event of equipment failure caused by non-human factors during the competition, upon confirmation by the judges, an application may be submitted to the chief judge for additional time to resolve the issue.

12. Contestants wishing to terminate the competition early must raise their hands to the referee, who will record the termination time. After the competition ends, no further activities related to the event are permitted.

13. All participating teams must submit their competition results in accordance with the event requirements and task specifications; any markings unrelated to the competition are strictly prohibited.

14. Upon completion of the competition, each team must confirm that all required documents have been submitted successfully. The judges will mark the designated section of the results document and sign it jointly with the participating teams for confirmation.

6.5 Staff Guidelines

1. All staff involved in the competition must follow unified instructions and provide excellent event support services with a strong sense of responsibility.
2. All staff members must arrive at their designated work areas on time, fulfill their duties conscientiously, perform their primary responsibilities effectively, and handle any temporary tasks to ensure the smooth conduct of the event.
3. All staff members must wear identification badges and carefully verify their credentials; only those whose credentials have been confirmed as accurate may enter the designated areas.
4. In the event of any emergency, report it promptly and implement appropriate crowd management measures to prevent major incidents, ensuring the successful completion of the competition.
5. Heads of all working groups shall remain at their posts, organize team members to efficiently complete their respective tasks, and ensure effective supervision and coordination.
6. All staff members are prohibited from making or receiving phone calls within the competition venue to ensure the proper functioning of all facilities.

6.6 Information for Referees

1. The arbitration panel operates under the "Chief Referee Responsibility System," comprising one Chief Referee, two Deputy Referees, and one Supervising

Arbitrator. Each participating institution may designate one instructor to serve as a competition referee, with specific responsibilities announced by the Chief Referee during the arbitration meeting.

2. Judges must strengthen their awareness of integrity and self-discipline, and shall not engage in improper conduct or participate in commercial hype under the guise of the competition. All judges for each event must sign a competition commitment letter and strictly adhere to confidentiality regulations. Judges are prohibited from contacting participants or teams privately or disclosing any information related to the competition.

3. During their duties, referees must wear uniform attire and display official identification, demonstrate civilized conduct, and accept supervision from participants.

4. Strictly adhere to competition discipline, comply with all regulations, and follow the directives of the event organizing committee and the chief referee. In case of any issues or objections during the competition, accept the chief referee's decisions. Perform duties according to assigned responsibilities, remain at their posts at all times, and refrain from leaving without authorization. Do not provide hints or answers regarding competition-related matters to participants, and promptly address any disciplinary violations. For technical disputes or unexpected incidents arising during refereeing, handle them promptly and appropriately, and report them immediately to the chief referee.

5. All referees must not interfere with the participants' normal competition.

6. Strictly implement the scoring criteria for competition items to ensure fairness, impartiality, authenticity, and accuracy; prohibit arbitrary scoring; and strictly forbid the use of official authority for fraudulent practices or favoritism.

7. Referees must attend pre-competition training; otherwise, their officiating qualifications will be revoked.

8. Any member or group of judges who falls under any of the following categories will be included in the "Disciplinary List for the Competition." Individuals listed will permanently lose eligibility to hold positions such as expert, judge, supervisory arbitrator, competition instructor, or event staff at the BRICS Development and Technological Innovation Competition, and their institutions along with relevant authorities will be notified.

(1) violates the competition rules and regulations.

(2) Privately disclosing or posting non-public or inaccurate information about skills competitions on social media platforms such as WeChat or QQ, or through other means.

(3) Individuals who are absent without valid reason, arrive late, leave early, or fail to perform their duties on two consecutive occasions during the competition period.

6.7 Registration Instructions

To ensure the smooth progress of the competition, all participating teams must register within the specified time. Please note the following when registering:

1. Participants must bring valid identification documents such as their ID card, student ID card (or teacher qualification certificate), and competition insurance certificate during registration and verification to confirm eligibility. Those who fail to present all required documents at the time of verification will not be permitted to participate.

2. When registering, participants must submit a copy of their ID card (A4 size, with both sides printed on the same page), a copy of their student ID card (or teacher qualification certificate) (A4 size), and one copy of their accidental injury insurance policy.

3. Fill out the registration form and ensure that the contact information provided is accessible during the competition.

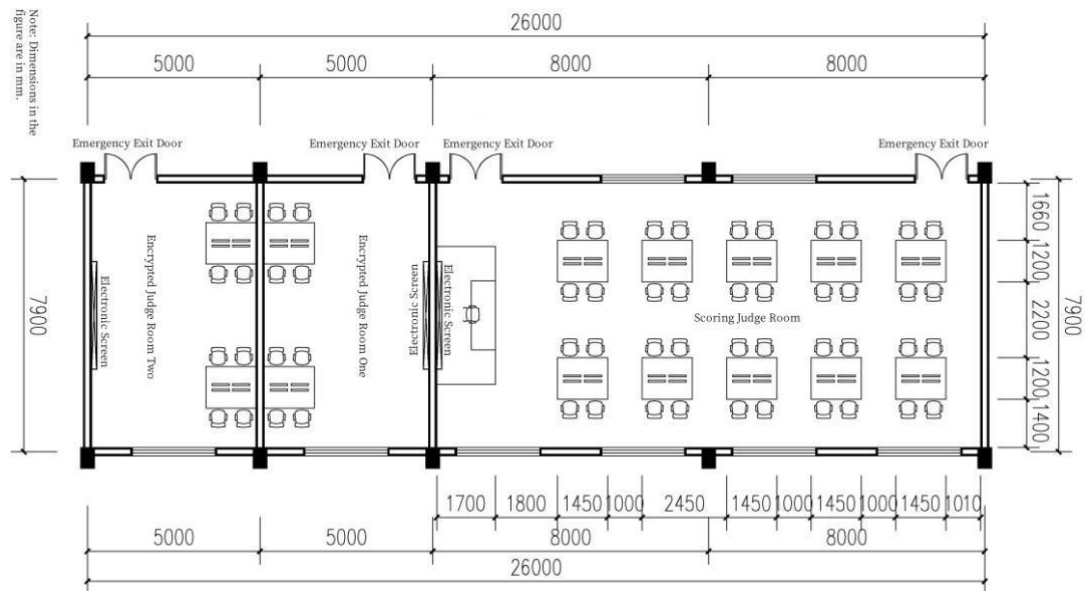
4. Verify participants' information, complete check-in procedures, arrange accommodation, and collect competition-related materials (including: team leader certificate, instructor certificate, participant ID, competition attire, and event guidelines).

7 Competition venue layout requirements

The competition area and workstation layout are shown in Figure 1.

[illegible]

The layout of the scoring jury room and the encryption room is shown in Figure



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8 Health and Safety

Event safety is a prerequisite for the smooth conduct of all aspects of skills competitions and constitutes a core consideration in both event preparation and operation. The competition organizing committee implements concrete and effective measures to ensure the personal safety of participants, instructors, coaches, experts, referees, technical support personnel, volunteers, and other stakeholders during the competition period.

(1) Security Protection Measures

1. All participants must verify that their competition equipment is safe and in proper working condition as required, strictly adhere to venue regulations and operating procedures, ensure personal and equipment safety, comply with referees' supervision and warnings, and compete in a civilized manner.
2. When using competition equipment, participants should carefully review the performance specifications of each device to ensure proper operation.
3. Participants must not touch the 220V power outlets at competition stations and take electrical safety precautions.
4. Based on the participating teams' configurations, reserve 5%–10% of hardware equipment as redundancy to prevent competition disruptions caused by equipment failures during events.

5. To prevent sudden power outages at the venue, the organizing unit must prepare generators or backup power supply plans to ensure the smooth conduct of the event.

(2) Safety Management Requirements

The competition organizing committee must assign dedicated personnel to inspect the competition venue, accommodation facilities, and transportation arrangements prior to the event, and establish clear safety requirements. The venue layout and all equipment installed there must comply with national safety regulations. When necessary, simulation tests may be conducted to identify potential issues. The host institution must eliminate all safety hazards in accordance with the committee's requirements before the event.

2. A security cordon has been established around the competition venue to prevent unauthorized personnel from entering, with dedicated personnel assigned for surveillance to prevent any incidents.

3. The host institution shall implement the emergency response plan in advance, clearly define relevant protocols and contingency measures, and provide qualified first aid personnel along with necessary facilities.

4. The competition organizing committee must collaborate with the host organization to develop a personnel management plan for the open competition area and experience zone. In addition to installing clear signage, additional guidance staff should be deployed, and alternative access routes must be established.

5. During the competition, event organizers must deploy additional personnel in key venue management positions to conduct continuous safety inspections and maintain a safety management log.

6. When participants enter the competition venue and event officials enter their work areas, the organizing unit is responsible for reminding and urging them to strictly refrain from carrying communication devices, photography or recording equipment, and any unauthorized tools. If necessary, such items shall be centrally provided and managed by the venue. Security screening equipment may be deployed as required to inspect individuals entering critical areas of the venue.

(3) Living conditions

1. All accommodation facilities arranged during the event must possess valid hotel operation permits.

2. During the competition, the organizing committee shall, in principle, uniformly arrange accommodation and meals for participants and instructors. The organizing committee must respect the religious beliefs and cultural customs of ethnic minority participants and ensure proper dietary and living arrangements for them in accordance with relevant national policies on ethnicity and religion.

3. The competition organizing committee and host organizations must ensure the traffic safety of participants, instructors, judges, and staff throughout the event.

4. The safety management of each competition event shall strictly comply with relevant national laws and regulations, ensuring the protection of personal privacy and personal freedom.

(4) Emergency handling

In the event of an accident during the competition, the discoverer shall immediately report it to the Competition Organizing Committee and take appropriate measures to prevent escalation. The Competition Organizing Committee shall promptly activate its contingency plan for response and notify the National Competition Organizing Committee. In cases of significant safety or health concerns, the event may be suspended, with the decision ultimately resting with the National Competition Organizing Committee.

(5) Penalty Measures

1. In the event of a major accident during a competition event, the organizing entity will lose its qualification to host such events.

2. Any team involved in a major accident due to its own fault will be disqualified from the competition.

3. If a participating team commits a violation and fails to rectify the issue after being advised or warned by venue staff, its eligibility to continue competing may be revoked upon approval and signature by the chief referee.

4. Any staff member involved in violations shall be held accountable in accordance with relevant regulations. In cases where the circumstances are severe and

result in major accidents, judicial authorities shall impose corresponding legal liabilities.

9 Complaints and Arbitration

The competition adopts a two-tier arbitration mechanism, with an Arbitration Committee established at the regional level and arbitration working groups set up for each event category. These event-specific arbitration working groups operate independently under the leadership of their respective event organizing committees.

(1) Any participating team may file an appeal with the competition arbitration panel regarding equipment, computer software/hardware, competition tools and supplies, officiating procedures, venue management, or any non-compliant conduct by staff that violates the event regulations; the appeal must be submitted by the team leader.

(2) Upon initiation of an appeal, the team leader shall submit a personally signed written appeal report to the Competition Arbitration Working Group. The appeal report must provide a comprehensive and factual account of the incident details, occurrence time, involved parties, and legal basis for the appeal. Oral appeals will not be accepted.

(3) The appeal must be submitted within 2 hours after the competition concludes (once all event requirements have been completed); submissions beyond this deadline will not be accepted.

(4) The Competition Arbitration Working Group shall organize a reconsideration within 2 hours of receiving the appeal report and promptly notify the

appellant of the reconsideration outcome in writing. If the appellant remains dissatisfied with the result, their team leader may file an appeal with the Regional Arbitration Committee. The arbitration decision rendered by the Regional Arbitration Committee shall be final.

(5) The arbitration result shall be signed for receipt by the appellant; no proxy acceptance is permitted. If the appellant leaves at the agreed time and location, it shall be deemed a voluntary waiver of the appeal right.

(6) The appellant may withdraw the appeal at any time.

(7) The complainant must provide accurate complaint information and strictly adhere to the complaint procedures; under no circumstances may they engage in excessive behavior that disrupts venue order.



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