ARTIFICIAL INTELLIGENCE
IN HEALTHCARE COMPETITION
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TABLES

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1. DEFINITIONS

**Advisory and Evaluation Committee**: The Committee that consists of experts who work in TEKNOFEST Artificial Intelligence in Health Contests on issues such as report evaluation, specification revision processes, report template creation, answering technical questions, and competitor information kits preparation.

**Authorized Team Member**: Team consultant in secondary education competitions, team captain and/or team consultant in higher education competitions,

**Bank Statement Form**: The form on which the payee states the bank details and his/her personal information.

**Contest Process**: The time between the date the contest applications are received and the date the final results are announced.

**Competition Representative**: TUSEB personnel assigned to deal with the needs and demands of the competitors and whose names have been reported to TEKNOFEST

**Higher Education Competition**: Competitions in which students or graduates of a higher education institution will participate.

**KYS**: Institutional Management System

**Secondary Education Competition**: The competitions joined by high-schoolers or high school graduates who are not registered to other schools.

**Nondisclosure Agreement**: Within the scope of Artificial Intelligence Contests in Health, “Institutional Privacy Commitment” which is shared by the Ministry of Health and signed by the competitors to ensure the competitors to use the anonymized information/document/data for training and/or testing their models.

**Stakeholder**:

**System**: Republic of Turkey Ministry of Health, Health Institutes of Turkey, T3 Foundation

**T3 Foundation**: Turkey Technology Team Foundation,

**Team**: The group consisting of 1 (one) or at most 5 (five) people

**Team Captain**: Team member authorized to represent the team in team competitions,

**Team Consultant**: Being mandatory in secondary education competitions, optional in higher education competitions; maximum 1 (one) teacher/instructor/academic for each team

**TEKNOFEST**: Aviation, Space and Technology Festival

**TEKNOFEST Competitions Committee**: Committee formed by the members responsible for stakeholder Institutions

**TUSEB**: Health Institutes of Turkey,

2. PURPOSE

Artificial intelligence solutions, which are frequently used in the field of information technologies, have recently started to be used in the field of healthcare. "Artificial Intelligence Competitions in Healthcare" are organized in order to find solutions to the problems that may be encountered in the field of health, and to increase the knowledge and trained manpower. To this end, in the 2022 TEKNOFEST event, there will be three different categories under the Artificial Intelligence in Health Competitions: "Category of Abdominal Disease Detection via Computer Vision", "Category of Medical Technologies", "Category of Development of Artificial Intelligence Based Analysis Methods in Bioinformatics". Two competitions will be held under each category, namely Secondary Education and Higher Education.
Detailed information about the competitions in these categories is presented below.

3. **CONDITIONS FOR PARTICIPATION IN THE COMPETITION**

- High school students and graduates studying in Turkey and abroad can apply to Secondary Education Competitions; university students (including Bachelor's, Associate's Degree, Master's, Doctorate and Open Education) and graduates in Turkey and abroad can apply to Higher Education Competitions.
- Applications can be made individually or as a team.
- A member of a team cannot be a member of another team of the same competition.
- In all competitions, teams can consist of only one person or at most 5 (five) people. (This number does not include the consultant.)
- Teams can be formed from a single school, or they can be formed as a mixed team by gathering one or more secondary school/higher education students. The competition category that the team can participate in will be determined according to the team members with the highest education level.
- Approved student documents for students along with the Project Detail Report must be submitted to the address [www.t3kys.com](http://www.t3kys.com)
- Only teams in Secondary Education Competitions are required to have a consultant.
- It is not obligatory to have a consultant for applications to Higher Education Competitions.
- The role of the consultant is to help students plan their own education, to guide them in academic, social and cultural matters, to help prepare the appropriate environment for the development of the student's personality as a whole with its mental, social and emotional aspects, etc. duties and services. The role of the consultant in the team is to provide the academic support needed for the project and guide the team members to find solutions to their problems.
- The Team Consultant should not be added as a team member.
- The signed and scanned document stating that the person who will act as a consultant will fulfill his/her consultancy duties and that patientis a teacher/trainer/academician and the assignment letter he will receive from the relevant education/training institutions will be submitted to the TEKNOFEST Competitions Committee until the Project Detail Report delivery date to the address [www.t3kys.com](http://www.t3kys.com) delivery date.
- The consultant undertakes to support the team until the final stage and to be with the team during the final stage. It is obligatory for the teams to be in the area with their consultants in the projects that are in the final stage.
- In case of a change of consultant, the request must be submitted in writing to the relevant TEKNOFEST Competitions Committee within 7 working days. The consultant change of the teams that do not make their requests as written in this article will not be accepted.
- The projects to be submitted to the competitions must be developed using artificial intelligence methods. The artificial intelligence methods used should be explained in summary in the Project Presentation Report and in detail in the Project Detail Report. Projects that do not include artificial intelligence components in their development will be excluded from the competition.
- Project ideas should be original. Projects that are found to be similar or imitation will be excluded from the competition. **If the competitor has participated in another competition with the same project before; the name, place, date, organizer, and result information of the competition participated in must be reported in the project file.**
- Applications are made online through the application system [www.t3kys.com](http://www.t3kys.com) until 31.03.2022. **(High School Category)**
• Between the application dates, the Authorized Team Member will register through the system, will register the team members in the system correctly and completely, and send an invitation to the e-mails of the consultants (if any) and members. The member to whom the invitation is sent, will log in to the Application System, accept the invitation from the “My Team Information” section and the registration will be completed. Otherwise, the registration will not be considered complete.
• Competitors who have completed the team formation process must apply to the competition in accordance with their project.
• All necessary processes within the scope of the competition (Application, Receipt of Reports, Report Results, Objection Processes, Member addition/removal procedures, etc.) are done through the KYS portal. Teams are required to follow their processes through the KYS portal.
• Adding/removing members must be done until the Project Detail Report Submission date.
• During the competition process, the processes of applying through the KYS, uploading reports and filling out forms are within the scope of the Authorized Team Member, and the competition processes are managed through this Authorized Team Member.
• The transportation and accommodation support to be provided to the finalist teams will be provided by TEKNOFEST on a limited basis. The number of people to be supported is 3 people (including the Team Consultant) per team and the teams will be notified later by the TEKNOFEST Competitions Committee. The Committee reserves the right to make changes.
• TEKNOFEST Competitions Committee has the authority to limit the number of members to be in the festival area. In case of restrictions, the committee will inform.
• Only one category or one competition can be applied for with the same project. Applications of teams applying to a different category with the same project or to a different competition organized within the scope of TEKNOFEST will be deemed invalid.
• The same team members can apply to other competitions organized within the scope of TEKNOFEST with different projects.
• Competitors will be able to access and participate in the competition only if they submit a signed “Confidentiality Agreement” to the data to be provided by the stakeholders in the competitions under the Category of Abdominal Disease Detection via Computer Vision.
• The competitor will be able to participate in the competition by reading and approving all the explanations and participation conditions in this specification before applying. In case the competitor is under the age of 18 (eighteen), it is obligatory to submit a document showing that this specification has been approved by his parent/guardian.

Applicants to the competition are deemed to have accepted all the conditions in this specification.

4. DETAILS of ARTIFICIAL INTELLIGENCE IN HEALTH COMPETITIONS

4.1. Category of Abdominal Disease Detection via Computer Vision

Under this category; two competitions, the “Secondary Education Competition in the Category of Abdominal Disease Detection via Computer Vision” and the “Higher Education Competition in the Category of Abdominal Disease Detection via Computer Vision” will be organized. Details of the process will be presented later in the technical specification.
4.1.1. Purpose and Subject

Abdominal pain constitutes a significant proportion of the reasons for admission to the emergency department. In the literature, it is stated that it constitutes approximately 5-10% of emergency service admissions. The approach to the patient with abdominal pain begins with a detailed questioning of the patient's pain and taking a detailed history, and continues with the patient's physical examination, appropriate laboratory and radiological imaging examinations. In the process of clarifying the cause of abdominal pain, patients are referred from emergency departments to radiology clinics for X-ray, ultrasound (US), computerized tomography (CT) examinations. Less frequently, magnetic resonance (MR) examination may be needed for children and pregnant patients. Patients referred to radiology clinics are evaluated by radiologists in the light of the clinical notes of the emergency department doctor, the notes of the clinics consulted, and laboratory findings. Afterwards, radiologists express their opinions about the patient with a free-text radiology report and thus support the diagnosis-treatment process. When all signs and symptoms are collected, the emergency department doctor consults the relevant clinical branches and tries to manage the patient who comes with abdominal pain. As a result of multidisciplinary evaluations, it is decided whether patient will be kept under observation in the emergency department, whether patient will be hospitalized, whether patient will need intensive care, whether there will be any interventional procedure or surgery, and whether there will be a need for referral.

The abdominal region is home to a wide variety of organ structures. Therefore, the causes of abdominal pain should be carefully examined. Abdominal pain may be due to many causes other than trauma, and the differential diagnosis list is extensive. It may be due to many reasons as non-specific abdominal pain (non-specific), bladder stones and inflammation (cholelithiasis and cholecystitis), appendix inflammation (appendicitis), pancreatic inflammation (pancreatitis), stomach inflammation (gastritis), kidney-ureter stones and inflammation, hernia, intestinal obstruction, intestinal inflammation, vascular occlusion, vascular rupture, cancer pain, cyst rupture etc.. Although patient history, doctor’s evaluation and laboratory findings are very important in the first stage; radiological imaging tests are frequently used to confirm or exclude the suspected condition and to narrow the differential diagnosis list. X-ray and especially ultrasound, is often the first step of the radiological imaging algorithm in the approach to the patient with abdominal pain, although it may vary partially according to the clinical application reasons. In cases where the current clinical situation cannot be clarified by history, physical examination, laboratory tests and first-line imaging methods, or in alternative processes, further evaluations are made with CT of the abdomen with or without contrast media. Abdominal CT is also used as the first radiological imaging tool in emergency departments where there is a large number of patients and in places where there is a shortage of radiologist.

Contestants in this category will use the data provided by the Ministry of Health- General Directorate of Health Information Systems for Turkish Health Institutes Presidency (TUSEB) by. In this competition, contrast or non-contrast CT series of the abdominal region related to 6 (six) different clinical conditions that cause the contestants to apply to the emergency service with the complaint of abdominal pain will be shared. These 6 (six) different clinical conditions include inflammation of the appendix (acute appendicitis), inflammation of the gallbladder (acute cholecystitis), inflammation of the pancreas (acute pancreatitis), kidney/ureteral stones, intestinal diverticulitis (acute diverticulitis), aneurysm / rupture of the abdominal main vessel. (aortic aneurysm/rupture/dissection). In addition, the cases in which these 6 clinical conditions are not followed will be shared as the 7th (seventh) subgroup. The number of cases planned to be shared including all subgroups is approximately 1050 (thousandfifty). A total of 350 (three
hundred and fifty) cases will be shared with the competitors during the competition. The data set will be shared according to the frequency of 6 (six) different clinical conditions within the determined 6 (six) groups, taking into account the real world statistical data. Cases in which 6 (six) different clinical conditions are followed will be labeled with the minimum bounding box (MBB) by radiologists on CT slices. It should be kept in mind that some of the 6 (six) clinical conditions mentioned can be seen simultaneously in the same CT slice of the same case or in different CT slices.

4.1.2. Evaluation of the Final

For 350 test cases to be shared at the time of the competition, it will be required to find more than 350 tags and their MBB coordinates out of a total of 7 different tags. In other words, in some cases, there will be a single label, and in some cases, there will be more than one label corresponding to more than one complaint at the same time. For this reason, the number of labels to be found will be more than the number of cases. The label classes to be used for each complaint are as follows:

0 – No finding
1 – Inflammation of the appendix (acute appendicitis),
2 – Inflammation of the gallbladder (acute cholecystitis),
3 – Pancreatic inflammation (acute pancreatitis),
4 – Kidney/ureteral stone,
5 – Intestinal diverticulitis (acute diverticulitis),
6 – Abdominal main vessel aneurysm /rupture (aortic aneurysm/rupture/dissection)

The output that the teams should produce during the competition will be in ascending order (case number, section number, predicted label, MBB Upper Left Point (x,y) of the label, MBB Lower Point on the Right (x,y)) for each case. During the evaluation, if the case number-section number and label value are correct for each label, the Intersection of Union (IoU) value will be calculated. In other words, IoU values will be calculated only for correctly detected labels, otherwise the success will be accepted as 0 for that label. Since there will not be an MBB coordinate for the no finding status, that is, the 0 label, the value (0,0) must be used in both corners to ensure format tracking. However, even if a different value is used, the coordinates will be ignored. According to all these explanations, each correctly known 0 tag will be 1 point and for other correctly known labels (1-6) MBB IoU value will be the earned score. The success score of the case will be the average of the IoU value of the labels in all sections found in the case. For 350 Cases, the best-to-worst classification performance of all teams will occur. The team rankings within 350 cases for each team will be the success order and the top 3 teams with the sum of the success rankings will be determined. In other words, teams will be ranked with the average performances per case, and the most successful team will be selected with the cumulative sum of the rankings. Details of the process will be presented in the technical specification.

4.2. Category of Medical Technologies

Under this category; two competitions, the “Secondary Education Competition in the Category of Medical Technologies” and the “Higher Education Competition in the Category of Medical Technologies” will be organized.
4.2.1. Purpose and Subject

One of the main purposes of artificial intelligence studies is to protect, monitor and improve the physical and psychological health of people. For this reason, it is necessary and important for the health field to be handled with many perspectives such as preventive, detective, managing and supervisory for artificial intelligence solutions for the development of value-added ideas and solutions. For this purpose, medical decision support systems for diagnosis and treatment, early preventive treatment methods, virtual guidance services, robotic physical therapy and rehabilitation systems, orthotics and prosthesis technologies, support systems that facilitate the lives of disadvantaged individuals, monitoring and emergency situations for the follow-up of chronic diseases, applications such as warning systems in the health ecosystem will increase the efficiency and success of all stakeholders and diagnosis/treatment processes. Through artificial intelligence-based medical technologies, it is aimed for individuals to create artificial intelligence-based projects that will benefit the society by harmonizing their social responsibility awareness with their technological knowledge and experience in these areas which are mentioned. In the target of applicable projects with innovation and technological development in every field that affects human life; usefulness, benefit to society and convenience are considered. Projects submitted in this direction will be evaluated and put into practice.

Applications for the following subjects will be accepted for the competition. Artificial intelligence methods must be used in all project proposals.

a. Motion tracking and support systems
Monitoring, warning and support systems for walking, sitting, falling, balance and posture disorders

b. Wearable technologies for chronic disease monitoring
Monitoring and/or emergency warning systems for chronic diseases as diabetes, cardiovascular diseases, neurological diseases, respiratory diseases, joint and bone diseases, etc.

c. In-hospital guidance systems for visually impaired individuals
Systems that facilitate all the activities of visually impaired individuals in health institutions.

d. Technologies to reduce unnecessary antibiotic use
Artificial intelligence-based solutions to prevent unnecessary and incorrect use of antibiotics.

e. Systems that can diagnose disease from breath components
Systems that reveal results for the diagnosis of various diseases by analyzing breath components (gas, heat, sound, flow, etc.).

f. Technologies for physical medicine and rehabilitation
Systems for increasing the effectiveness and efficiency of diagnosis and treatment processes in physical medicine and rehabilitation

g. Orthotics and prosthetic technologies
Artificial intelligence based solutions in orthotics and prosthetic technologies

h. Decision support systems for disease diagnosis
Artificial intelligence-based decision support systems for the diagnosis of diabetes, coronary artery, Alzheimer's, multiple sclerosis (MS), amyotrophic lateral sclerosis (ALS), lung cancer and prostate cancer. Within the scope of this subject, only projects for the diagnosis of the specified diseases will be accepted.
4.2.2. Evaluation of the Final

After the Project Detail Report scoring, the projects of the teams that qualify for the finals are determined by the Advisory and Evaluation Committee in the event area on the date specified in the competition calendar; according to the importance of the project problem, the accuracy and completeness of the technological solution, the usefulness and innovativeness of the project output. It is obligatory to prepare a poster for the Committee evaluation. Together with the posters; displaying the visual presentations, prototypes, academic work, etc. submissions will enable the Advisory and Evaluation Committee to evaluate the project based on evidence. According to the final evaluations, the final ranking of the finalist teams will be announced on the https://www.teknofest.org/ site after the TEKNOFEST Competition final.

4.3. Category of Developing Artificial Intelligence Based Analysis Methods in Bioinformatics

Under this category; two competitions, “Secondary Education Competition in the Category of Developing Artificial Intelligence Based Analysis Methods in Bioinformatics” and “Higher Education Competition in the Category of Developing Artificial Intelligence Based Analysis Methods in Bioinformatics” will be organized.

4.3.1. Purpose and Subject

New generation ohmic technologies are important and promising systems used in the diagnosis of diseases and evaluation of possible treatment options. Thanks to the methods developed for the determination of intracellular molecules at different biological levels, it has become possible to measure hundreds of biomolecules simultaneously. In this way; levels of data of genome, transcriptome, proteome, metabolome etc. for multiple phenotypes have been obtained and related data sets have been collected in various databases and made available to researchers.

Of these systems; new generation genome sequencing technologies are used especially in the diagnosis and follow-up of rare diseases, cancer and chronic diseases. However, genetic variation information obtained from sequencing technologies alone often does not lead clinicians to a conclusion in determining diagnosis and treatment options. Therefore, the relationship between the phenotypic information of the patient and the genetic variations should be evaluated together in order to make sense of the genetic variations detected in the patient and to establish disease relationships. In particular, as a result of genetic analyzes such as Whole Exome Sequencing (WES), Whole Genome Sequencing (WGS), millions of variants belonging to a patient can be detected, and it becomes a big problem to make sense of them and prioritize them according to the disease. Many variants belonging to the patient are evaluated in the VUS (Variants of Unsignificance) category, and their clinical significance remains unclear. Similarly, new generation proteomics and metabolomics data can provide important data for the pathology of diseases. In order for these data to be evaluated correctly, they often need to be combined together and compared with clinical features. Thanks to the development of artificial intelligence-based bioinformatics tools that can meet this need, it will contribute to the development of innovative approaches for the diagnosis and treatment of diseases, as well as the correct determination of syndromes with mixed/conflicting phenotypic features.

In addition, approaches for the development of candidate biomarkers, drug targets or drugs can be
developed using the datasets available in the literature. It is expected that the tool, which is expected to be developed for this purpose, will be able to make certain solutions one by one or preferably all together, not being limited to the following examples.

a. Detection of all dysmorphological features (eg, hand, foot, skeletal disorders, etc.) of a patient, especially the face, using computer vision and matching them with the findings of the related syndromes through similarity scores.

b. The application should be able to scan open databases (eg. www.omim.org, https://www.ncbi.nlm.nih.gov/clinvar/, https://cancer.sanger.ac.uk/cosmic etc.) and current literature and should be able to establish genotype-phenotype relationship with diseases comprehensively and with high accuracy using the data points they have reached. In addition, the application should be able to list genes and variations that may be responsible for the disease.

c. By using the phenotypic features and disease-related gene information of the application, it should be able to prioritize the variants detected in the patient (if appropriate genetic testing has been performed) specific to the syndrome.

4.3.2. Evaluation of the Final

• All teams can participate in the competition with their project ideas, their own developed software and project prototypes.
• In the competition, all teams make project presentations in front of the members of the Advisory and Evaluation Committee. Presentations should be made in Powerpoint within 5 minutes at most.
• The members of the Referee Committee compare and evaluate the Project Presentation Reports prepared by the teams beforehand with the presentation.
• In the competition, teams are expected to run the software they have developed, if any, on their own computers. Software and/or prototype presentations, must be presented in front of the Advisory and Evaluation Committee members within a maximum of 5 minutes, using the teams' own equipment.
• After the evaluation made by the Advisory and Evaluation Committee at the final stage, the teams ranked in the final are announced.
• The ranking of the finalist teams according to the evaluations will be announced on https://www.teknofest.org/ after the TEKNOFEST Competition final.

Competition Schedule

• Artificial Intelligence in Healthcare Competition Medical Technologies Category High School Level
• Artificial Intelligence in Healthcare Competition Bioinformatics Analysis Development Category High School Level
• Artificial Intelligence in Healthcare Competition Disease Detection with Computer Vision Category High School Level
<table>
<thead>
<tr>
<th>DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 March 2022</td>
<td>Announcement of Technical Specification and Annexes for Category of</td>
</tr>
<tr>
<td></td>
<td>Abdominal Disease Detection via Computer Vision</td>
</tr>
<tr>
<td>31 March 2022</td>
<td>Contest Application Deadline</td>
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<tr>
<td>31 March 2022</td>
<td>Q/A Meeting with the Teams - 1</td>
</tr>
<tr>
<td>25 April 2022</td>
<td>Project Presentation Report Deadline</td>
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<tr>
<td>29 April 2022</td>
<td>Announcement of the Teams Passing the Preliminary Qualification According to</td>
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<tr>
<td></td>
<td>Project Presentation Reports Results</td>
</tr>
<tr>
<td>30 April 2022</td>
<td>Beginning Approval of Confidentiality Agreements</td>
</tr>
<tr>
<td>09 May 2022</td>
<td>Publishing sample training data for the Category of Abdominal Disease</td>
</tr>
<tr>
<td></td>
<td>Detection via Computer Vision (type tagged)</td>
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<tr>
<td>18 May 2022</td>
<td>Q/A Meeting with the Teams - 2</td>
</tr>
<tr>
<td>16 June 2022</td>
<td>Project Detail Report Deadline</td>
</tr>
<tr>
<td>01-05 July 2022</td>
<td>Announcement of Project Detail Report Results and Finalist Teams</td>
</tr>
<tr>
<td>29-31 July 2022</td>
<td>Competition Date</td>
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</table>

**Competition Schedule**

- **Artificial Intelligence in Healthcare Competition Bioinformatics Analysis Development Category University and Above Level**
- **Artificial Intelligence in Healthcare Competition Medical Technologies Category University and Above Level**
- **Artificial Intelligence in Healthcare Competition Disease Detection with Computer Vision Category University and Above Level**
Announcement of Technical Specifications and Annexes for Category of Abdominal Disease Detection via Computer Vision

Technical Specifications is a document in which detailed technical information about the competition is given. Technical information such as infrastructures, labeling formats, scoring details will be included in this document. Project Presentation Report and Project Detail Report formats will be shared together with the technical specifications.

Q&A Meeting with Teams -1

After the competition applications are completed, a question and answer meeting will be held with the teams. Information about the meeting will be announced later.

Evaluation of Competitions

The applications made are subject to pre-selection by the Project Submission Report Jury. The Project Detail Report submitted by those who pass this stage is evaluated by Project Detail Report Jury. Those who pass the evaluation according to the Project Detail Report are entitled to participate in the final. Poster/application/prototype presentations of the finalists are evaluated by the Jury and the winners are announced.
Submission and Evaluation of the Project Presentation Report

Teams should upload the Project Presentation Report, which summarizes the project issues, to the KYS system until the date specified on the TEKNOFEST website and in accordance with the report format to be specified. Detailed information regarding the submission of the Project Presentation Reports will be shared with the teams that have completed their application after the competition application deadline has expired. These reports will be reviewed by the Jury and the teams that are eligible to continue the competition will be announced. After the Project Presentation Reports are evaluated and scored by the Advisory and Evaluation Committee, the teams that get the threshold score or higher to be determined by the TEKNOFEST Competitions Committee will be able to continue to the next stage. Teams that do not submit a Project Presentation Report or whose report has been eliminated by the Jury will not be able to participate in the next stage. The project presentation report template will be available on the website.

Publishing Sample Training Data for the Category of Abdominal Disease Detection via Computer Vision (type tagged)

After the applications are completed, sample images that can be used during the competition will be shared with the teams. Teams can train or test their systems on these images. The Nondisclosure Agreement required to access the data will first be approved by the Team Official through the system and then collected from the relevant Teams with wet signatures by all team members on the Contest Final day. The Team that does not submit the signed Confidentiality Agreement will be disqualified before it can participate in the Competition Final. Detailed information on the subject will also be shared at the “Question and Answer Meetings”.

Q&A Meeting with Teams-2

A question and answer meeting will be held with the contestants who have passed the project presentation stage to answer questions about the competition. In case of a change in the meeting date, the contestants will be informed about the meeting environment.

Submission and Evaluation of the Project Detail Report

Teams that pass the Project Detail Report (PDR) stage must upload their Project Detail Reports to the KYS system until the date specified on the TEKNOFEST website and in accordance with the report format to be specified. Project Detail Report should be a report in which the project development processes including the Analysis, Design, Development, Test and Implementation stages are explained in more detail, as well as the estimated production cost, project schedule and project scope. After the evaluation of the submitted Project Detail Reports by the Jury, the teams that qualify for the final will be announced on the date specified in the Competition Calendar.

Competition Final

Poster/application/prototype presentations of the finalists are evaluated by the Advisory and Evaluation Committee in the event area and the winners are announced. The Advisory and Evaluation Committee signs the result with a report in the competition area. Before leaving the competition area, the ranking
team members must fill in and sign the Bank Notification Form and submit it to the TUSEB Competitors Officer.

5. AWARDS

For competitions under all categories; First Prize in Secondary Education Competitions: 10.000 TL, Second Prize: 5.000 TL, Third Prize: 2.000 TL and First Prize in Higher Education Competitions: 25.000 TL, Second Prize: 15.000 TL, Third Prize: 10.000 TL.*

<table>
<thead>
<tr>
<th>Rank</th>
<th>Secondary Education Competition</th>
<th>Consultant</th>
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<tbody>
<tr>
<td>First</td>
<td>10.000 TL</td>
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</tr>
<tr>
<td>Second</td>
<td>5.000 TL</td>
<td>2.000 TL</td>
</tr>
<tr>
<td>Third</td>
<td>2.000 TL</td>
<td>2.000 TL</td>
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<table>
<thead>
<tr>
<th>Rank</th>
<th>Higher Education Competition</th>
<th>Consultant</th>
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<tbody>
<tr>
<td>First</td>
<td>25.000 TL</td>
<td>2.000 TL</td>
</tr>
<tr>
<td>Second</td>
<td>15.000 TL</td>
<td>2.000 TL</td>
</tr>
<tr>
<td>Third</td>
<td>10.000 TL</td>
<td>2.000 TL</td>
</tr>
</tbody>
</table>

(* - Payments to be made include taxes, fees, etc., and the actual value of the prize to be obtained by the competitor will consist of the remainder after the said legal deductions are subtracted.)

Best Presentation Awards

In each categories, presentations, posters and prototypes of the finalist teams will be evaluated by the Advisory and Evaluation Committee by comparing the presentation techniques, the presentation and the results obtained, regardless of whether they are ranked or not, and a plaque will be presented on behalf of the Team in each category under the name of the Best Presentation Award. The specified award is for prestige and does not have a monetary value.

Rewarding Considerations

- The awards are valid for the teams that meet the success criteria.
- Awards will be given to the teams and will be shared equally among the team members.
- Only one of the TEKNOFEST competitions and sub-categories can be awarded with the same subject.
- Foreign nationals who do not have an account in a bank in Turkey are required to designate a person residing in Turkey as a fiduciary.
- Competitors must submit all documents related to the payment with wet signature to TUSEB in order for the payment to be made.
- Regardless of the number of the competitors of the winning team in secondary education competitions, a total of 2,000,00 TL will be paid to the consultant (including people performing the same task) per competitor or team. The same consultant can receive an award from only one of the TEKNOFEST
competitions and sub-categories.
- The provisions of the Turkish Health Institutes Presidency Award Regulation published in the Official Gazette dated 25.09.2021 and numbered 31609 and the Central Government Expenditure Documents Regulation published in the Official Gazette dated 31.12.2005 and numbered 26040 shall be taken as basis in other matters related to awarding.
6. GENERAL RULES

• Authorized persons of each team have the right to object to the relevant referee at the final stage. Objections can be made orally, provided that they are given in writing afterwards. Verbal objections are made in writing within 24 hours at the latest. In any case, unwritten objections will not be considered. Objections made are examined by the Advisory and Evaluation Committee and decided within 7 working days.

• In case of objection to the evaluation made by the Advisory and Evaluation Committee, the second evaluation will be made by the Committee members composed of different people. If an objection is made a second time after this evaluation, the third evaluation will be carried out by the "High Objection Board". High Objection Board will be consisted of the executive institutions of TEKNOFEST, the Ministry of Industry and Technology and the Turkish Technology Team Foundation, the Ministry of Health, the Presidency of Turkish Health Institutes and the experts in the Advisory and Evaluation Committee. In order to apply to the High Objection Board, Teams must meet all of the following conditions:
  1. The Team that will make an objection must have lost with a point difference of at most 10% of the jump-off point in the relevant competition.
  2. An objection should have been made to the evaluation made by the Advisory and Evaluation Board, and as a result of the second evaluation of this objection by different Board members, no change has occurred as a result of the competition.
  3. Objection must be made by all Team members with the approval of the Team Consultant within 7 working days after the Advisory and Evaluation Board announces the second time objection evaluation result to the Teams.
  4. The petition must be clear, understandable and based on concrete reasons.

• After the evaluation results are announced, authorized persons from each team must submit their objections and justifications in writing. All objections are taken from www.t3kys.com.

• The objection process must be made until the date that the competition committee will decide after the competition results are announced. Otherwise, objections will not be considered.

• The duty of the consultant is to help students plan their own education, to guide them in academic, social and cultural matters, to help prepare the appropriate environment for the development of the student's personality as a whole with its mental, social and emotional aspects, etc. duties and services. The role of the Team Consultant in the team is to provide the academic support needed for the project and guide the team members to find solutions to their problems.

• Although the intellectual work of the competition was created as a result of the effort of the competitor/competitors in the team, it reflects the characteristics of the team members and the Consultant will not be accepted as the owner of the work.

• Teams that have benefited from the previous year's reports on our website should indicate on the report’s relevant page that they are quoting. The explanation must be stated after the quoted sentence. QUOTE FORMAT: "Cited Sentence/s" (Year, Competition Name, Category, Team Name) EXAMPLE CIRCUMSTANCE: "The most important problem that slows down the debris removal and search for earthquake victims is that the location of the earthquake victim is not determined in the wreckage." (2021, Competition of Artificial Intelligence in Health, Category Medical Technologies, Team X)

• Each competitor is obliged to take the necessary safety measures and to show the care expected of him towards his surroundings while racing.

• The Turkish Technology Team (T3) Foundation and the organization committee reserve the right
to make any changes in this specification in order to ensure fair results, in order for the competitions to be held within objective criteria, to better meet all kinds of needs of the competitors, to ensure safety measures and to make the competition conditions work.

- TENOFEST Competitions Committee reserve the right to cancel the competitions if, as a result of the evaluations to be made after the application process, there are not enough applicants with the necessary technical knowledge and skills to participate in the competitions.
- Competitors are obliged to benefit from the area allocated to them and the services provided. Apart from these, they cannot go to the way of supplying the technical needs they need on their own. If they encounter a technical problem, they are obliged to immediately notify the authorities in the field and to carry out the installation, work and assembly processes in a way that will not cause any accident for themselves and other competitors. TEKNOFEST Competitions Committee reserves the right to exclude teams that are determined not to meet the specified conditions, so that the organization can be held in a safe environment. Stakeholder Institutions and organization officials are not responsible for the damages that may occur as a result of the violations of the competitors, their committees and their related persons during the competitions.

- Regarding the competition, the competitor accepts and undertakes all kinds of written or visual promotions, publications, social media and internet broadcasts to be made before or after the competition by the T3 Foundation, TEKNOFEST, Ministry of Health and TUSEB. The competitors accepts and declares that the financial rights in the law and all kinds of intellectual property including but not limited to designs, codes, algorithms, models, software, applications and manufactured products, as well as the right to process, disseminate, reproduce, represent, visual or auditory means and public transmission on the science and art work which is contributed to the production belong to TUSEB without any time limitation and that the competitor has no right or demand on it. For other matters, the competitor should consult TUSEB. TUSEB reserves the right to disclose all intellectual property to the public as it deems appropriate and the right to give shares to the competitors.

- In the event that the competitor inflicts damage on TUSEB due to the violation of the intellectual and industrial property rights of any product, such damages will be compensated by the relevant team (including the consultant).

- T3 Foundation, TEKNOFEST, Ministry of Health and TÜSEB; reserves the right to share and/or publish the reports submitted by the competitors within the scope of the competitions they participate in, in order to set an example for the competitors who will participate in the TEKNOFEST competitions to be held from now on.

- A Certificate of Participation will be given to all finalist teams entitled to participate in the competition.

7. Code of Ethics

- In the festival area or during the competition process (report process, evaluation process, etc.), any situation, act, word, contrary to the morals of the society, plagiarism and/or any cheating has been committed, legal proceedings will be started immediately against the person/persons who committed this act, their team will be disqualified from the competition, and they will be banned from participating in any organization and event within the Turkish Technology Team Foundation for at least 2 years.

- The points to be considered in the language used in all communication with T3 Foundation, TEKNOFEST, Ministry of Health and TUSEB are as follows;
• Rude and impolite words and behaviors should be avoided.
• Insults, threats and bad words should be avoided.
• Insulting by directly targeting with social media tools such as Email, Facebook, Skype, Messenger, Whatsapp, Twitter etc.
• In petitions and objections, attention should be paid to the spelling rules and style.
• Situations, verbs, words, etc. that will affect the operation and motivation of other teams should be avoided in the festival area.
• It is expected to treat by taking into account the social peace in the area where accommodation services are provided and its surroundings. Otherwise, the legal process will be initiated by the relevant institutions.
• During the competition process, it is the team's responsibility to back up/storage the necessary equipment and materials needed by the competitors, taking into account all kinds of negativities, and to replace parts in case of a possible negativity, and it is not necessary to supply products from another team.
• It is necessary to pay attention to behave in accordance with the requirements of service and in an impartial manner; without discrimination of language, religion, philosophical belief, political thought, race, age and gender, and without causing behaviors and practices that prevent equality of opportunity in every area TEKNOFEST provides service.
• It is necessary not to use or allow goods and resources of TEKNOFEST and other companies, institutions and organizations for other than their purposes and service requirements, and not to waste these goods and resources.
• It is necessary to support the efforts made to facilitate the festival's operation, to meet its needs in the most effective, fast and efficient way and to increase the service quality.
• It is expected from the contestants to be careful about all kinds of benefits, financial or other obligations which affect or seem to affect the impartial and objective performance of the contestants in the festival area related to themselves, their relatives, friends or the people or organizations they have a relationship with. Contestants are expected to take precautions to avoid conflicts of interest.
• It is necessary to avoid waste and extravagance in the use of TEKNOFEST, buildings and vehicles, and other public goods and resources, and to act effectively, efficiently and frugal while using working hours, public goods, resources, workforce and opportunities.
• It is expected from TEKNOFEST team members to be accountable for their responsibilities and obligations while performing their duties, and open and ready for corporate evaluation and audit; and managers to take the necessary measures to prevent transactions or actions and corruption that do not comply with the goals and policies of their institutions and train their personnel on ethical behavior principles, monitor compliance with these principles and guide ethical behavior.
• While performing their duties, team members must not make any statements, commitments, promises or initiatives that are binding on the institutions they work for, and must not make deceptive and untrue statements.

8. Statement of Liability

TEKNOFEST and Stakeholder are in no way responsible for any product delivered by the competitors or any injury or damage caused by the competitor. TEKNOFEST, Stakeholder and organization officials are not responsible for the damages caused by the competitors to third parties. TEKNOFEST and Stakeholder are not responsible for ensuring that teams prepare and implement their own systems within
the framework of the laws of the Republic of Turkey.

TEKNOFEST and Stakeholder reserve the right to make any changes in this specification.