

PROJECT PROPOSAL EVALUATION REPORT

AGY200

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PROJECT'S TITLE: "A Simulation System For Smarthome Control Using BCI"

Deadline : 22/05/2024 (1900 PM)

CONTENTS

GENERAL INFORMATION.....	3
1. REPORT INFORMATION	3
1. COMPLIANCE WITH THE CALL:	3
1.1. Eligibility for Call.....	3
2. GENERAL EVALUATIONS ABOUT THE PROJECT:	3
2.1. Dimension I: Industrial R&D Content, Technology Level and Innovative Aspect of the Project..	3
2.2. II. Size Suitability of Project Plan and Establishment Infrastructure for the Project.....	4
2.3. III. Convertibility of Project Outputs into Economic Benefit and National Gain	6
2.4. Evaluation for Establishing the Support Scope of the Project.....	10
3. INDUSTRIAL R&D CONTENT, TECHNOLOGY LEVEL AND INNOVATIVE ASPECTS OF THE PROJECT: ..	14
3.1. Presentation of the Project with Concrete / Measurable Targets and Solution Approaches (R&D Systematics):	14
3.2. Innovative Aspects of the Project:	14
3.3. Technology Level of the Project:	15
3.4. Critical (Negative) Determinations:.....	Hata! Yer işareti tanımlanmamış.
4. SUITABILITY OF THE PROJECT PLAN AND ESTABLISHMENT INFRASTRUCTURE FOR THE PROJECT: .	17
4.1. Business plan:	17
4.2. Workforce Plan:.....	17
4.3. Budget Plan:	18
4.4. Risk and Financing Plan:	18
4.5. Critical (Negative) Determinations:.....	Hata! Yer işareti tanımlanmamış.
5. CONVERTIBILITY OF PROJECT OUTCOMES INTO ECONOMIC BENEFIT AND NATIONAL GAIN:	19
5.1. Economic Return Expectation and Commercial Success Potential:	19
5.2. National Achievements:	20
5.3. Critical (Negative) Determinations:.....	Hata! Yer işareti tanımlanmamış.
6. SPECIAL NOTES:	Hata! Yer işareti tanımlanmamış.
6.1. Special Notes	Hata! Yer işareti tanımlanmamış.
7. SPECIAL NOTES TO PROF.ALAGOZ:.....	Hata! Yer işareti tanımlanmamış.
7.1. Special Notes to PROF.ALAGOZ.....	Hata! Yer işareti tanımlanmamış.

GENERAL INFORMATION

1. REPORT INFORMATION

Project name A Simulation System For Smarthome Control Using BCI

1. COMPLIANCE WITH THE CALL:

1.1. Eligibility for Call

Description: Examine the Call Text and evaluate whether the project is suitable within the scope of the call. Please provide information about the project proposal and the rate at which the targets set in the call are met. (Up to 5000 characters)

All projects prepared within the scope of SWE523 course are eligible for the call. Reason: Since the main purpose of the call is to help students experience the Project Evaluation Process, a suitability score of 100/100 was given.

2.1. Dimension I: Industrial R&D Content, Technology Level and Innovative Aspect of the Project

1. Explain the general purpose of the project and define the problem that is intended to be solved by the project. What is the outcome(s) of the project?

Note: Questions to obtain this information are already included in the project proposal form.
(Up to 2000 characters)

The project aims to leverage AI and Machine Learning to assist people with disabilities by enabling them to control their smart homes using brain signals. This brain-computer interface (BCI) technology would translate brainwaves into commands for various smart home devices, including:

- Lights
- TVs and audio systems
- Thermostats
- Appliances (refrigerator, microwave, blender)
- Shower/bath controls
- Emergency services and assistance calls
- Internet access

By providing this non-invasive control method, the project seeks to improve the independence and quality of life for individuals with disabilities in their own homes.

2. Evaluate the following issues regarding the project.

- Innovative Aspects

- R&D studies to be carried out

- Methods and Solution Approaches to be Used in R&D Studies

- Technical/Technological Problems to be Worked on

- Company/s Contribution to R&D Studies

- Technical/Technological Feasibility Studies, up-to-dateness of the technology areas the project focuses on

Note: Questions to obtain this information are already included in the project proposal form.

(Up to 5000 characters)

- Uses BCI, AI, and ML for innovative smart home control.

- Applies AI/ML to BCI data for accurate command recognition (potentially using large language models).

- Key technical challenges: non-invasive BCI development, BCI accuracy, integrating BCI with AI/ML and smart home systems.

- Company expertise: AI/ML (unclear on invasive BCI experience).

- Non-invasive BCI actively researched, AI/ML for smart homes promising.

- Invasive BCI raises ethical concerns and requires extensive medical device development.

- Proposal needs clarification on company's BCI technology approach (invasive vs non-invasive).

3. Compare the proposed project output with the organization's current products / processes and the outputs of previously completed R&D projects. (By examining the website, product catalogues, media, etc.).

(Up to 3000 characters)

- Project proposes a novel BCI-based smart home control system, unlike existing company products.

- Existing products might focus on voice assistants or smartphone apps for smart home control.

- Success criteria emphasize user experience (satisfaction), BCI accuracy (command recognition), and safety (potentially for invasive BCI).

- Novelty and focus on BCI integration differentiate this project from past R&D efforts.

2.2. II. Size Suitability of Project Plan and Establishment Infrastructure for the Project

1. Evaluate the following issues based on your observations during the company visit and your interviews with the project team.

- Adequacy and competence of the knowledge/experience of the project personnel

- Suitability of the infrastructure of the organization/s to realize the project

- Suitability of the project plan to achieve the targeted output in the project

Note: Questions to obtain this information are already included in the project proposal form.

(Up to 5000 characters)

- Project team competency: Team's experience in AI/ML, BCI technology (especially if invasive) seems viable.

- Infrastructure suitability: With the suggested infrastructure, the project could create the expected outcome.
- Project plan achievability: Although it is the first time that the company Works on such a project, the overall plan might yield the expected outcome.

2.3. III. Project Output into Economic Benefit and National Gain

1. Evaluate the project output in terms of import substitution/import reduction or export potential.
(Up to 2000 characters)

- The project's outcome could reduce reliance on imported assistive technology for people with disabilities.
- The BCI system's novelty and potential user benefits suggest high export potential.
- Project development might lead to increased imports of specific smart home devices and BCI components for system integration.

2. Evaluate the project output in terms of the qualities of the added value it will create and the dimensions of the productivity increase.

(Up to 2000 characters)

- The project's BCI system could significantly improve the quality of life for people with disabilities by increasing their independence in daily activities.
- Reduced reliance on caregivers and healthcare personnel could lead to cost savings and productivity gains in the healthcare sector.

3. Are the economic predictions presented in the project proposal and the economic feasibility report, if any, based on concrete foundations? (Targeted areas of use, size of domestic and international markets, strategy to access those markets, potential customers and market shares of competitors.)

(Up to 2000 characters)

- The economic forecasts in the proposal might lack concrete foundations due to limited market research.
- While the Fortune Business Insights report (<https://www.fortunebusinessinsights.com/industry-reports/smart-home-market-101900>) provides some data, a broader analysis is needed.
- Ideally, the report should consider targeted user groups, domestic and international market sizes, competitor market shares, and a clear market access strategy.

4. Is the project output a product (or process) that can be widely produced in our country? If so, will the project output be a significantly improved product/process compared to domestic/international counterparts?

Note: This question will be answered based on the referee's general observations and experiences, taking into account all the information provided in the project proposal.

(Up to 2000 characters)

- The BCI system itself has the potential for domestic production in Turkey, leveraging existing technological capabilities in AI/ML and software development.
- However, challenges exist regarding the brain implant chips, which might require more advanced technology not yet widely available in Turkey.

- Overall, the project output could be a significantly improved product compared to existing solutions by offering BCI-based smart home control, but domestic production might depend on external chip suppliers.

5. Evaluate, with concrete justifications, the advantages of the project output, if any, that can enable it to be commercialized over its domestic/foreign competitors.

Note: This question will be answered based on the general observations and experiences of the referee, taking into account the information given in the "B.2. Innovative Aspects of the Project" section.

(Up to 2000 characters)

- BCI-based control offers a unique feature compared to existing smart home solutions, potentially attracting early adopters.
- Increased independence for users with disabilities creates a strong value proposition, driving customer demand.
- Government grants for assistive technologies could support commercialization.
- Challenges include raising public awareness about BCI technology and recouping high development costs.
- Regulatory hurdles, especially for invasive BCI methods, might delay market entry.
- National insurance coverage for BCI systems is uncertain, requiring a broader commercialization strategy.

6. Please indicate any risks (Technical, Legal, etc.) and obstacles that may be encountered during the commercialization stages of the project output.

Note: C.4. Risk and Financial Management: Information to answer this question is received under the heading of Risks that may be encountered and Precautions to be Taken during the commercialization stages of the project output.

(Up to 2000 characters)

- Technical risks:

- Non-invasive BCI technology might not achieve perfect accuracy or user comfort, impacting user experience.
- Integration challenges between BCI devices, AI/ML models, and smart home ecosystems could arise.

- Legal risks:

- Invasive BCI methods raise ethical concerns and require extensive medical device development, potentially facing stricter regulations.
- Data privacy regulations might need to be addressed regarding user brain signal collection and analysis.

- Commercialization risks:

- High cost of BCI development and potential brain surgery could limit product affordability.
- Public awareness about BCI technology and its benefits might be low, requiring significant marketing efforts.

- Potential negative publicity surrounding brain surgery risks could undermine sales, especially for elderly users.

- Additional considerations:

- The project proposal should clarify the company's experience with invasive vs. non-invasive BCI technology.

- Concrete evidence demonstrating safety and minimal risk for elderly users is crucial for broader market acceptance.

7. Evaluate the following issues within the scope of national gains and widespread impact.

- Is a technology being developed that will spread nationally at the end of the project (including improvement of existing technology)?

- Will the project output have an impact on increasing the competitiveness of companies in our country?

- Will the project output create new business areas?

- Is it possible for the project output to create new applications in different sectors?

- Does the project output provide a solution to a problem or issue that is widely known or lacking in the sector/has strategic importance for the country?

Note: This question will be answered based on the referee's general observations and experiences, taking into account all the information provided in the project proposal.

(Up to 5000 characters)

- This project could develop BCI technology used nationwide, potentially improving existing assistive technologies.

- Success could increase competitiveness of Turkish companies by:

- Encouraging domestic BCI component production (excluding initial brain implant chips).

- Developing expertise in AI/ML and BCI integration.

- Positioning Turkish companies as leaders in assistive technologies.

- New business areas might include:

- BCI device manufacturing and distribution.

- BCI system installation and support services.

- BCI-based applications in various sectors (e.g., rehabilitation, education).

- BCI data could have applications beyond smart homes:

- Personalized healthcare interventions based on brain activity analysis.

- BCI-based communication systems for people with severe disabilities.

- Exploring applications in rehabilitation, education, and gaming industries.

- The project tackles the important issue of assisting people with disabilities and the elderly, which is strategically significant for Turkey's aging population and also the aging population in Europe. The BCI system could significantly benefit this demographic by increasing independence and improving quality of life.

What is the NACE code of the project output? (In projects containing more than one output, the NACE code of the component with the highest technology level will be used.): J62.0.9

What is the GTIP (Customs Tariff Statistics Position) code of the project output, if any?:
990000000003

What is the Technology Readiness Level (THS) at the beginning of the project?: TRL2

What is the Technology Readiness Level (THS) targeted to be reached at the end of the project?: TRL5

You can benefit from the auxiliary question set document at the link below when determining the Technology Readiness Level (THS).

[Technology Readiness Level \(THS\) determination.](#)

2.4. Evaluation for Establishing the Support Scope of the Project

1. If it is decided that the project will be supported by PROF.ALAGOZ; Please make your evaluation under the following headings to establish the support scope of the project. Briefly state your reasons for the expenditure items that you do not find appropriate to support. If there are elements that you find excessive in quantity, make concrete (numerical) suggestions.

a. Suitability of man/month rates and total man-month value, taking into account the competence of the personnel and the current workload (M011)
(Up to 3000 characters)

The man/month rates and planning work packages in this sense seems viable.

b. Travel Expenses (M012) (Those directly related to R&D activities should be specified)
(Up to 3000 characters)

All the travel expenses are planned for meetings with either with engineers or designers that could be handled online. This should be further questioned.

c. Tool/Equipment/Software/Publication Purchases (M013)

i. Suitability of the tool/equipment/software/publication envisaged for the project for R&D activities
ii. Among the tools/equipment/software/publication purchases that you find appropriate, those that will be used in production or mainly in routine analyzes of production.

(Up to 3000 characters)

- The project seems valid but there might be issues with budgeting for tools.
- Listing "smart home devices (varies)" is too vague. This makes it hard to estimate costs and could lead to problems if the specific devices needed are expensive or unavailable.
- To fix this, the project should specify the exact types of smart home devices they need. This could involve:
 - Identifying devices compatible with the BCI system.
 - Choosing a specific brand or product range.
 - Setting a budget for individual devices or the total category.
- They should also explore using existing equipment or open-source software if possible.
- Researching current market prices for smart home devices would help create a more accurate budget.
- Finally, having a plan for unexpected costs (if specific devices become unavailable or more expensive than expected) would be helpful.

D. Works Outsourced to R&D and Testing Organizations (M014) (Content, relationship with the project, budget, whether a preliminary contact-contract has been made with the relevant institution, duplications, also the necessity of foreign consultancy and service procurement, if any, and its affordability with domestic means, etc. should be taken into consideration)
(Up to 3000 characters)

No outsourcing.

E) Service Procurement (M015) (The contents of the service procurements in the project and their contribution to the project should be examined.)
(Up to 3000 characters)

All the service procurement specified is valid.

f. Suitability of material purchases and quantities for R&D studies in the project (M016)
(Up to 3000 characters)

The materials requested matches with the planned study.

g. Project Duration
(Up to 3000 characters)

Project duration, which is 2 years, is valid and consistent.

2. Please state your suggestions, if any, for improving the R&D quality of the project, deepening its scientific and technological dimension, and increasing the implementation efficiency of the project. You can also forward these suggestions to the company if you need.
(Up to 3000 characters)

- Use more specific data to back up claims about market size and user needs.
- Research and consider potential long-term effects of brain implant surgery.
- Conduct a more in-depth market analysis to identify target users, competitors, and potential challenges.
- These suggestions could improve the project's scientific basis, technological depth, and practical implementation.

3. If declared by the organization in the "C.2.1. Project Team" list in the Project Proposal, please indicate your opinion as to whether the "idea owner researcher(s)" is the person(s) who came up with the submitted project idea.
(Up to 3000 characters)

Project team and the author is different.

3. INDUSTRIAL R&D CONTENT, TECHNOLOGY LEVEL AND INNOVATIVE ASPECTS OF THE PROJECT:

3.1. Presentation of the Project with Concrete / Measurable Targets and Solution Approaches (R&D Systematics):

Explanation: Among the statements under each criterion regarding the evaluation of the project, choose the judgment that you think is most appropriate for the presented project.

one) Defining the project output by giving concrete and measurable goals:

- ☐ The goals of the project have not been determined and the success criteria of the project outputs have not been defined.or the success criteria given are unrealistic.
- ☒ **Project deliverables have been determined, but** Concrete and measurable success criteria for these are partially given.
- ☐ The objectives of the project and the success criteria of the project outcomes are concrete, measurable and used to measure the success of the project results.**adequately defined.**

Literature / patent research conducted during project preparation, technical feasibility studies and determination of standards / specifications to be followed regarding the project output:

- ☐ Preliminary research (patent, literature), technical feasibility and standard and specification determination studies required for the projectis **partially made**, the studies in question**The project is planned to be completed after it has been initiated.**
- ☐ Although necessary for the project, preliminary research (patent, literature), technical feasibility and standard and specification determination studies**not done**, in this respect**No work is foreseen within the scope of the project**(or the work done is not directly related to the project).
- ☒ Preliminary research (patent, literature) and technical feasibility studies for the project**done at an adequate level (as required by the project)**, standards and specifications to be followed**has been determined.**

3) The suitability of the techniques and technologies to be used/developed in the project and the determined solution methods in terms of achieving the project goals (Please indicate your justification and explanations regarding the judgment you have chosen for this criterion in the free text field of this evaluation dimension of your report):

- ☐ In the solution methods determined by the techniques and technologies selected for the project**There are some shortcomings.**
- ☒ Appropriate methods and a systematic working method for the project**not determined**(The methods to be used in the R&D process are insufficient analytically and/or experimentally).
- ☐ Solution methods determined by the techniques and technologies selected for the projectis **sufficient and appropriate.**

3.2. Innovative Aspects of the Project:

Explanation: Among the statements under each criterion regarding the evaluation of the project, choose the judgment that you think is most appropriate for the presented project.

The innovativeness level of the project output (Indicate your justification and explanations for **one)** the judgment you chose for this criterion in the free text field of this evaluation dimension of your report)

- ☐ With the project, a new product/process will be developed that is not superior to its existing counterparts in the national market, but is unique in the organization.
- ☐ With the project, a new product/process that is unique in the international market will be developed.
- ☐ With the project, an improved product/process that is superior to its existing counterparts in the national market will be developed.
- ☐ The project output has no comparative difference/advantage/superiority over its existing counterparts in the company/market.
- ☐ With the project, an improved product/process will be developed that is not superior to its existing counterparts in the national market, but is superior to the organization's existing products/processes.
- ☐ With the project, a new product/process that is unique in the national market will be developed.
- ☒ With the project, an improved product/process that is superior to its existing counterparts in the international market will be developed.

The project aims for a cutting-edge product/process by using brain signals (BCI) for smart home control. This is different from existing methods like voice assistants or apps. For people with disabilities, BCI could mean more independence in controlling their surroundings. The technology might even extend to a wider range of users in the future.

3.3. Technology Level of the Project:

Explanation: Among the statements under each criterion regarding the evaluation of the project, what do you think about the presented project? the most suitable choose judgment.

one) Currentness of the technology involved/related to the project:

- ☐ Project known It involves the application of a method, technique or technology to a new field, sector, product or process.
- ☐ Methods and tools that do not have research direction/content and are lagging behind current technologies will be used in the project.
- ☒ The most up-to-date technology of today will be used at the international level on the subject of the project.
- ☐ Current technology, which is widely used at the national level, will be used in the project.

2) Strategic value of the technology included/related to the project:

- ☐ Project results may lead to the development of specifications, standards or technical regulations.
- ☐ Required for the design and development of the project output at the end of the project **Bringing technology to our country** and thus in the field to which the project is related **Reduction or elimination of technological foreign dependency** is in question.
- ☒ A critical technology will be used to develop an industry, product or process for the first time in the country.
- ☐ The project involves the development of a technology that concerns national security and/or has international confidentiality.
- ☐ The technology involved/related to the project does not have a strategic priority for the country.

3) The organization's unique contribution level to the R&D and technical/technological content of

the project:

- ☐ **organization** Its original contribution to R&D studies is limited, a significant part of the R&D studies in the project is carried out by the institution/organization from which the service is procured, and its contribution to the organization's knowledge will be limited.

- ☐ The project is in the nature of technology transfer, and the organization presenting the project has no contribution to the R&D activities of the project. The technology transfer in question will not contribute to the organization's research and technology development ability.

- ☒ All/almost all of the R&D work within the scope of the project will be carried out by the project team.

- ☐ A significant part of the R&D studies within the scope of the project will be carried out by the organization, and a part outside its field of expertise will be carried out by the service providers.

4) Difficulty level of the project for the organization:

- ☐ Project work is a challenge that the organization must overcome. **contains technical/technological uncertainties.** Project studies are designed to increase the R&D capability and technological knowledge of the organization.

- ☐ Project studies should be of a nature that will increase the R&D capability and technological knowledge of the organization. ma On the other hand, they are routine practices that repeat existing acquired skills.

- ☒ The project presents significant technological challenges for the organization, including areas of technology that are new to the organization.

4. SUITABILITY OF THE PROJECT PLAN AND ESTABLISHMENT INFRASTRUCTURE FOR THE PROJECT:

4.1. Business plan:

Explanation: Among the statements under each criterion regarding the evaluation of the project, what do you think about the presented project? the most suitable choose judgment.

one) Project and work package durations, sequence and connections between work packages.

- ☒ Although the work package sequence and connections between work packages are appropriate, project and/or work package durations may vary. **There are those who are not suitable for the project.**

- ☐ Project duration depends on project scope **very well set up**. Work flow-timetable based on work packages and sub-work packages **has been prepared appropriately**. Links between work packages are defined.

- ☐ Work package sequence and project work package durations **not realistically prepared**, links between work packages **not sufficiently defined**.

2) The adequacy and suitability of the work packages in terms of content to achieve the project objectives.

- ☒ Work packages are realistic and feasible in terms of content and are designed to achieve project goals. **is enough**.

- ☐ Activities required for the project **determined, but** work packages are not properly allocated.

- ☐ In terms of content in work packages **significant shortcomings** It has not been prepared in understandable detail and in a way that will achieve the project objectives.

3) Defining intermediate outputs (milestones) in terms of traceability (tracking) of the project.

- ☐ Interim outputs for traceability of the project **not adequately defined**.

- ☒ The defined intermediate outputs are sufficient for the traceability of the project.

4.2. Workforce Plan:

Explanation: Among the statements under each criterion regarding the evaluation of the project, what do you think about the presented project? the most suitable choose judgment.

one) Adequacy of workforce planning for all areas of expertise required by the project - including forecasts for additional employment and consultancy / service procurement.

- ☐ There are deficiencies in new employment and/or consultancy/service procurement planned for the issues required by the project and in which the organization is inadequate.

- ☒ The expertise and competencies of the project team are compatible and sufficient with the project..

- ☐ Although the organization has the knowledge required by the project, new employments and consultancy / service procurement have been planned realistically and concretely for all issues that are insufficient.

- ☐ What the project requires in the organization **Expert personnel are not available in all areas and the project team** In order to carry out a systematic R&D study in the technological field included in the project proposal **is not enough**.

2) Suitability of task sharing of project employees and recommended man/month ratio and total man-month values

- ☐ Duties of project employees in work packages **has been determined**, but man/month rates and total man-month values are unrealistic.
 - ☐ The contribution of project employees to the project is not clear and task sharing **is not done**. Recommended man-month rates and total man-month values are unrealistic.
 - ☒ The tasks of the project employees in the work packages are sufficiently determined, the man/month rates and the total man-month value are realistic.
- The capacity to internalize (turn into permanent capabilities in the organization) the knowledge and experience gained from outside the organization (through consultancy / service procurement) in the project and the adequacy of the measures taken for this purpose
- 3)
- ☒ The organization has the personnel infrastructure to internalize the knowledge and skills acquired from outside the organization as a result of the project.
 - ☐ The organization does not have the personnel infrastructure to internalize the knowledge and skills that will emerge as a result of the project, and has not taken any measures in this regard. Consultancy/service procurement is not envisaged in the project, or since the services that the organization plans to outsource to the project do not carry R&D content or are outside the organization's main areas of activity, it should not be expected to internalize the knowledge and skills that will emerge within this scope.
 - ☐ The organization will internalize the knowledge and skills acquired externally in the project **to personnel infrastructure** **Although it does not have as of the project proposal date** To address this deficiency, **adequate planning** (additional employment, joint work with consultants, trainings, etc.).

4.3. Budget Plan:

Explanation: Among the statements under each criterion regarding the evaluation of the project, what do you think about the presented project? the most suitable choose judgment.

one) Planning for budget items required for R&D studies.

- ☒ All budget items required for the project **planned**; However, some of the expense items are not compatible with the work to be done in terms of quality or quantity.
- ☐ A significant portion of the budget items required for the project **not planned** or a significant portion of the expense items are not compatible with the work to be done in terms of quality or quantity.
- ☐ All budget items required for the project **planned**; expense items **in quality and quantity** is compatible with the work to be done.

2) Compliance of expense items with market values.

- ☐ The amounts foreseen for expense items were generally not compatible with market values.
- ☒ Amounts foreseen for expense items **many compatible with market values** (at a reasonable level) was found. (Personnel expenses could be lowered if hired within the country)
- ☐ All amounts foreseen for expense items were found to be compatible with market values (at a reasonable level).

4.4. Risk and Financing Plan:

Explanation: Among the statements under each criterion regarding the evaluation of the project, what do you think about the presented project? the most suitable choose judgment.

one) Anticipation of possible risks during the execution of the project and commercialization of its output and precautions taken against them

- ☐ The organization identifies possible risks in the project **partially foresees** and partially take measures to manage possible disruptions. **has planned**.
 - ☒ The organization evaluates the risk elements in the project **foresees** and measures to manage possible disruptions and alternative solutions (Plan B) adequately. **has planned**.
 - ☐ The organization takes measures to manage risk elements and possible disruptions in the project. **did not plan**.
- 2) Adequacy of financial resource planning for the organization to carry out the project.
- ☒ The organization has made adequate planning for the financial resources required to carry out the project.
 - ☐ The organization provides the financial resources required to carry out the project. **did not plan**. It is very likely that the project cannot be carried out as planned due to inadequacies in the financial resource plan and the organization's equity.

5. PROJECT OUTCOMES INTO ECONOMIC BENEFIT AND NATIONAL GAIN:

5.1. Economic Return Expectation and Commercial Success Potential:

Explanation: Among the statements under each criterion regarding the evaluation of the project, what do you think about the presented project? the most suitable choose judgment.

- one)** Potential market/usage of the project output.
- ☒ The project output has the potential to take part in the international market.
 - ☐ Project output **an imported product** will take its place.
 - ☐ The project output only has the potential to appear in the national market.
 - ☐ Project output **a new market** or constitutes a usage area.
 - ☐ Project output **No potential for exploitation or commercialization**.
 - ☐ The project output will not be released to the market, it is planned to be used only by the organization.
- 2) Economic return potential of the project output, its impact on productivity increase and/or cost.
- ☒ The project outcome will provide the organization with efficiency gains or cost reductions. (economies of scale might happen if sales boom)
 - ☐ The project output will provide economic return to the organization.
 - ☐ The project output provides economic return / productivity increase or cost reduction to the organization **not expected** (project output **It is not capable of turning into economic benefit**).
 - ☐ Project output of the organization according to current situation **significantly** will provide efficiency increase or cost reduction.
 - ☐ Project output of the organization according to current situation **significantly** will provide economic returns.
- The adequacy of the economic feasibility and market research of the project, TAKING INTO
- 3) CONSIDERATION THE INDUSTRIAL DESIGN CRITERIA (such as the reality of the plans for the recovery of the monetary resources spent on the project)
- ☐ Market research and economic feasibility have been carried out at an adequate level, taking into

account customer expectations and requirements, INDUSTRIAL DESIGN CRITERIA.

- ☒ Market research has been carried out by taking into account customer expectations and requirements, INDUSTRIAL DESIGN CRITERIA, but a sufficient level of economic feasibility has not been made.
- ☐ Customer expectations and requirements INDUSTRIAL DESIGN CRITERIA were not taken into account and the economic feasibility of the project was not made.
- ☐ The establishment processes have not been analyzed and the economic feasibility of the project has not been made.
- ☐ The establishment processes were analyzed in detail and the economic feasibility of the project was determined at a sufficient level TAKING INDUSTRIAL DESIGN CRITERIA INTO CONSIDERATION.

5.2. National Achievements:

Explanation: Among the statements under each criterion regarding the evaluation of the project, what do you think about the presented project?the most suitablechoose judgment.

one) The knowledge that the results obtained from the project work can bring to the country.

- ☐ Although the study does not contribute to the national level, it will contribute to the company's knowledge.
- ☒ Project **internationally** commercialization is widespreadit will provide knowledge in a technology field that has been developed but is expected to be commercialized in the near future.
- ☐ The study will contribute to national technological knowledge.
- ☐ With the knowledge gained as a result of the project, we will not be separated from international competition.
- ☐ Project studies do not have the potential to create or increase knowledge at the national or company level.

2) Potential for the project output to be subject to patent.

- ☐ Project output **national patent** may be the subject.
- ☐ The project output is not patentable.
- ☒ The project output may be subject to international patent.

3) The impact of the project on increasing university-industry collaborations.

- ☐ Technical/technological consultancy will be received from the university in the project.and its contribution to the project is clearly stated.
- ☐ The project envisages outsourcing services from the university.
- ☐ Procurement of any technical/technological consultancy or service from the university even though it is necessary in the projectnot foreseen.
- ☒ Find a need for service procurement from the university in the projectit is.

4) The project's potential to initiate new R&D projects.

- ☐ of the projectdifferentin technology fields/sectorsnewapplications orlead to research studiesit has potential.
- ☒ To the organizationR&Dbeing able to do projectscontinuityIt is a profitable project.
- ☐ The project is not of a nature that will trigger new R&D studies.

- 5) Impact on creating new business areas and employment.
- ☐ The potential of the project output to create new jobs or increase employment **there is no.**
 - ☒ **Technology based companies** has the potential to reveal
 - ☐ The outcome of the project is to create new business areas and/or **increasing employment** It has potential.
- 6) Potential to create sectoral collaborations such as main industry-sub-industry.
- ☒ The project has the effect of creating sectoral collaborations, developing sub-industry or transferring information to sub-industry.
 - ☐ The impact of the project on creating sectoral collaborations, developing sub-industry or transferring information to sub-industry **there is no.**
 - ☐ Project proposal jointly submitted by more than one organization, **It is a pre-competitive collaboration.**
 - ☐ The project proposal, jointly submitted by more than one organization, will contribute to the formation of long-term collaborations and increase competitiveness in the sector.
- 7) The effect of reducing development differences between regions.
- ☒ The project and its outputs reduce the development gap between regions **not expected.**
 - ☐ The project and its outputs will have the effect of reducing development differences between regions.
- 8) Benefits to social groups such as the elderly, disabled, etc. and to socio-cultural life.
- ☒ The project and its outcomes have a positive impact on socio-cultural life.
 - ☐ The project and its outputs have no impact on socio-cultural life.
- 9) Positive effects on living things and the environment.
- ☒ **Evaluation of natural / limited resources** and its effective use will be ensured.
 - ☐ Project activities and output are harmful to the environment and living things. **does not have an overriding goal of creating a positive impact.**
 - ☐ Project activities and output have direct positive effects on the environment and living things, and this is one of the main goals of the project.