17.4.4 SUSTAINABILITY LITERACY OF STUDENTS



17.4.4 Sustainability Literacy of Students

The students of the institution demonstrate a good understanding and awareness of the United Nations Sustainable Development Goals (SDGs). This knowledge is reflected in their academic projects, where they actively incorporate sustainability principles and address real-world challenges related to environmental protection, social well-being, and technological development. Through innovative and socially relevant project work, students contribute towards achieving the SDGs and demonstrate their commitment to building a sustainable future.

Evaluation of Sustainability Literacy of Students through Projects

Projects will be selected based on the student's interest in the field of Mechatronics engineering. Students will be divided into groups of 3-4 members. Every group will be mentored and monitored by a faculty guide. The students have to undergo projects in industry under Mechatronics stream or they can do in-house project.

Reviews are conducted by a committee consisting of project coordinator, guide and faculty members.

ZEROTH REVIEW – Verification of Industry Finalization and Feasibility of Project

- Review mark is based on selection of industries, submitting the company letter/acknowledgement, Title of project, Feasibility of project completion.
- Getting internal guide consent and approval in the project diary.
- Presentation, contribution, dress code and performance of individual students will be considered for evaluation.
- Literature review pertaining to problem identified shall be done by the students
- Students shall do design calculation and software modelling of the proposed project.
- Verification by the guide and design expert. Further, approval is obtained from the project coordinator.

FIRST REVIEW – Submission of Design calculation, Assembly, part drawings and bill of material

Review mark is based on:

- Submission of industry attendance for individual student approved by external guide and internal guide, submission of Design calculation, Assembly and part drawing approved by Project guide and Project coordinator
- Project report includes Abstract, Introduction, Literature Review corrected by Internal guide and Project diary submission.
- Presentation, contribution, performance and dress code of individual students.
- Students shall collect the hardware components required for the project/ The simulation required for the project shall be carried out.
- Evaluation team members of the department shall visit the industry concerned to verify the progress of the project and necessary arrangements must be made by students.
- Fabrication of the proposed project shall be accomplished by the student at the concerned industrial premises.

SECOND REVIEW – Verification of Industry attendance and Industry inspection.

Review mark is based on:

- Submission of industry attendance for individual student approved by external guide and internal guide
- Work progress, Material purchase, fabrication status and its video
- Project report with Abstract, Introduction, Literature Review, Design calculation, Assembly drawing and part drawing, Bill of Materials approved by Internal guide, project diary submission,
- Attendance during Industry inspection.
- Presentation, contribution performance and dress code of individual students.
- Students shall publish a paper in an International Journals or in International conference organized by premier institutions
- Evaluation team members of the department shall visit the industry concerned to verify the progress of the project and necessary arrangement must be made by students.

THIRD REVIEW – Verification of completion of project, documentation

- Review marks is based on: Submission of completion certificate, Paper publication proof, Submission of industry attendance for individual student approved by external guide and internal guide
- Submission of final project working model, video submission of their work progress details, final Project report approved by internal guide, project diary submission, attendance during Industry inspection, feedback from industry.
- Presentation, contribution and performance of individual students.

END SEMESTER PROJECT VIVA VOCE EXAM

- The viva – voce examination is evaluated based on presentation by individual batch members, demonstration of the project, project diary, project report, dress code and the components decided by external examiner.
- Final report copies (Number of batch members + 2) should be submitted to project guide one day prior to scheduled viva date duly signed by project guide and head of the department

Project expo will be conducted before the commencement of viva voce. The project expo creates knowledge sharing among students.







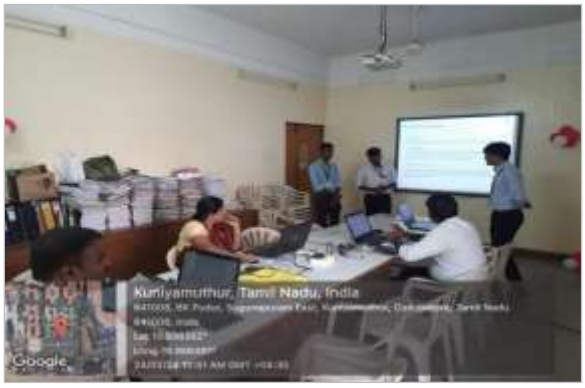
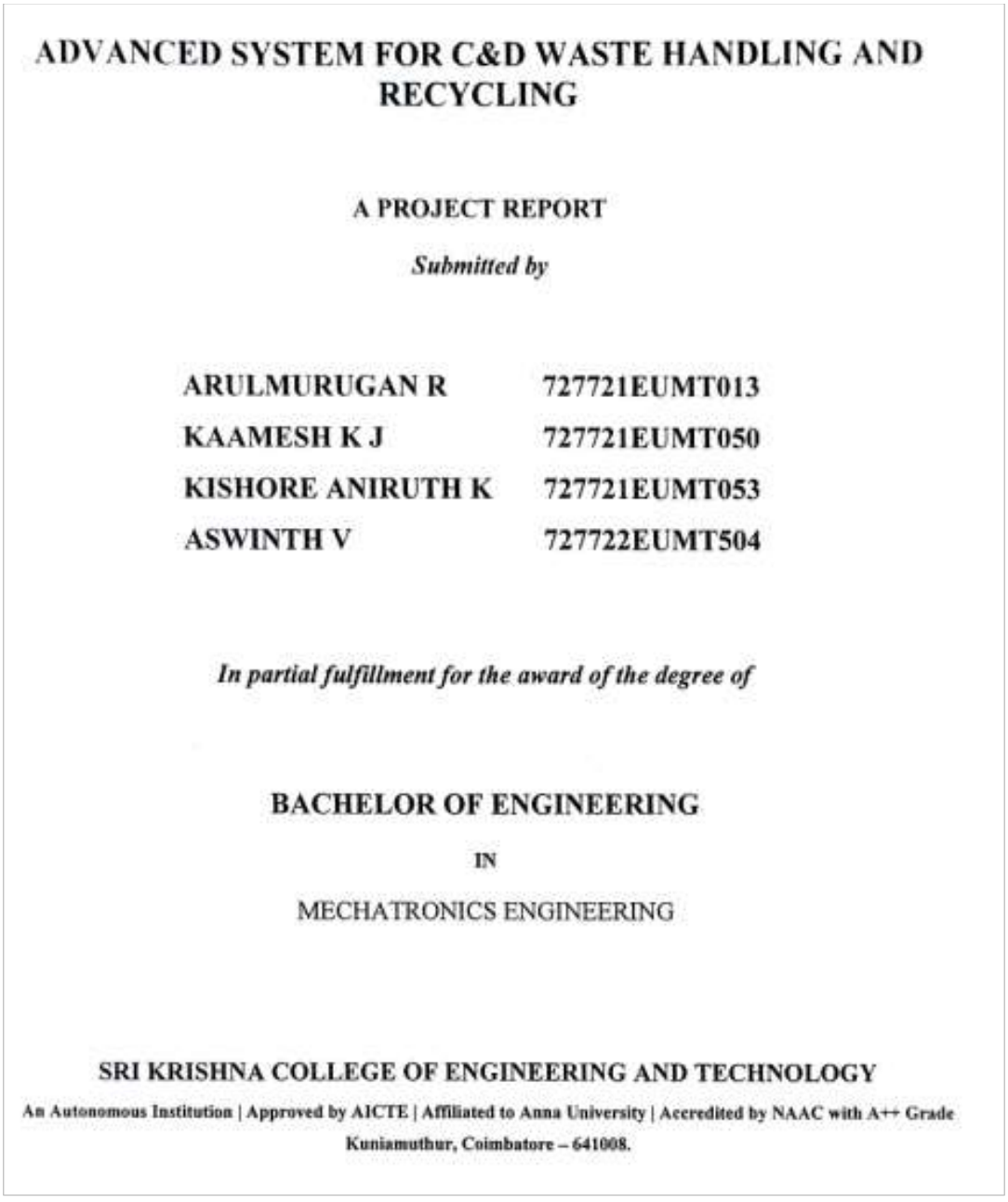


Figure 3.4.1 Project Expo and review

Samples from Project Reports

Sample 1: Advanced System for C&D Waste Handling and Recycling



ADVANCED SYSTEM FOR C&D WASTE HANDLING AND RECYCLING

A PROJECT REPORT

Submitted by

ARULMURUGAN R	727721EUMT013
KAAMESH K J	727721EUMT050
KISHORE ANIRUTH K	727721EUMT053
ASWINTH V	727722EUMT504

In partial fulfillment for the award of the degree of

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IN

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Title page – Advanced System for C&D Waste Handling and Recycling

Sample 1: Advanced System for C&D Waste Handling and Recycling (continued)

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SUSTAINABLE DEVELOPMENT GOALS

The Sustainable Development Goals are a collection of 17 global goals designed to blue print to achieve a better and more sustainable future for all. The SDGs, set in 2015 by the United Nations General Assembly and intended to be achieved by the year 2030. In 2015, 195 nations agreed as a blue print that they can change the world for the better. The project is based on one of the 17 goals.

Questions	Answers
Which SDGs does the project directly address?	SDG 11, SDG 12, SDG 9.
What strategies or actions are being implemented to achieve these goals?	Waste segregation, lead screw press, IoT, circular economy
How is progress measured and reported in relation to the SDGs?	Waste tracking, landfill reduction, recovery rates.
How were these goals identified as relevant to the project's objectives?	Supports waste reduction, recycling, and sustainability.
Are there any partnerships or collaborations in place to enhance this impact?	Waste firms, construction companies, research institutions.

Sustainable Development Goals mapping – Advanced System for C&D Waste Handling and Recycling

Sample 1: Advanced System for C&D Waste Handling and Recycling (continued)

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BONAFIDE CERTIFICATE

Certified that this project report **"ADVANCED SYSTEM FOR C&D WASTE HANDLING AND RECYCLING"** is the bonafide work of **"ARULMURUGAN R (727721EUMT013), KAAMESH KJ (727721EUMT050), KISHORE ANIRUTH K (727721EUMT053), ASWINTH V (727722EUMT504)"** who carried out the project work under my supervision.

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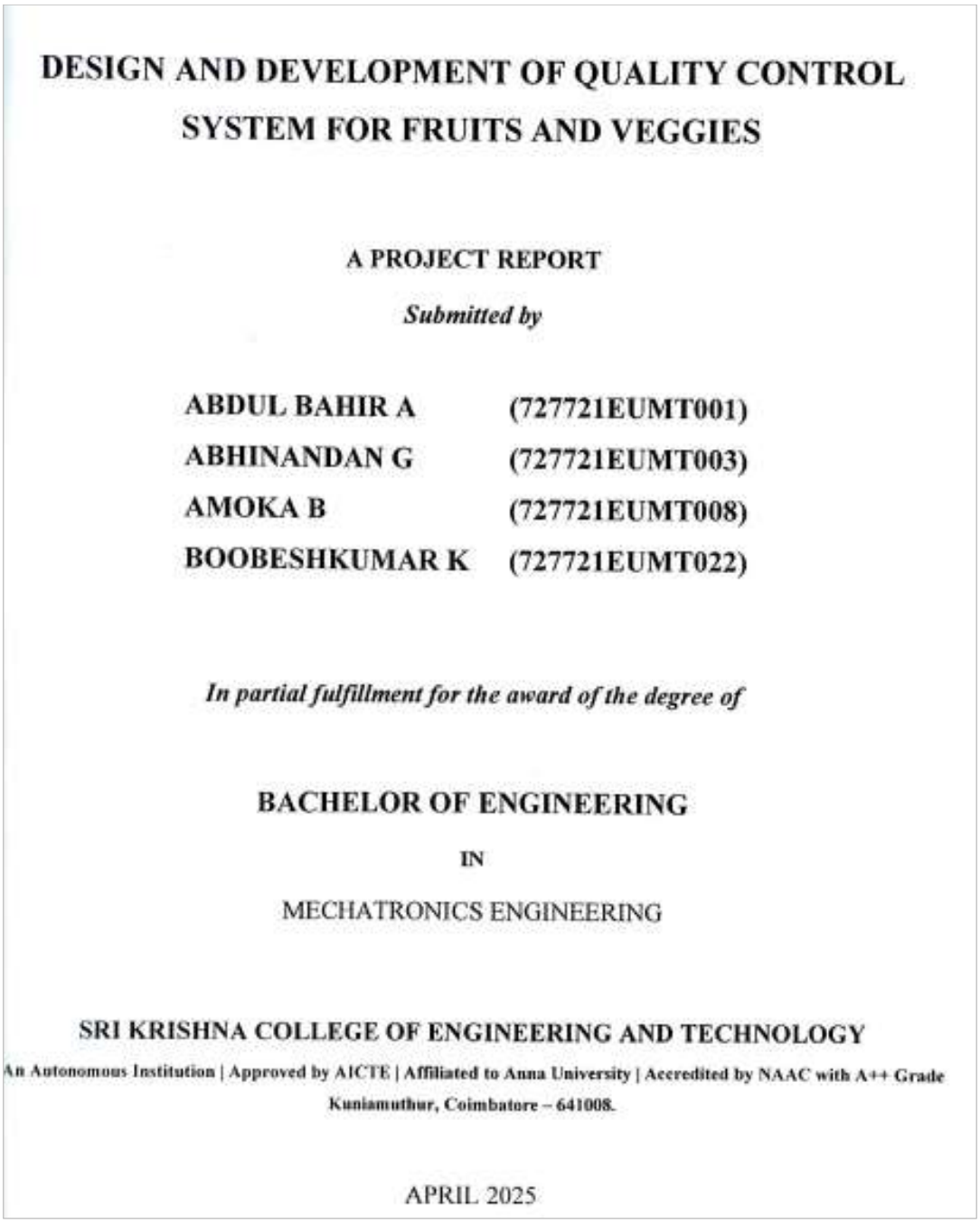
INTERNAL EXAMINER

EXTERNAL EXAMINER

Bonafide certificate – Advanced System for C&D Waste Handling and Recycling

Sample 2: Design and Development of Quality Control System for Fruits and Veggies



DESIGN AND DEVELOPMENT OF QUALITY CONTROL SYSTEM FOR FRUITS AND VEGGIES

A PROJECT REPORT

Submitted by

ABDUL BAHIR A (727721EUMT001)
ABHINANDAN G (727721EUMT003)
AMOKA B (727721EUMT008)
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APRIL 2025

Title page – Design and Development of Quality Control System for Fruits and Veggies

Sample 2: Design and Development of Quality Control System for Fruits and Veggies (continued)

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Questions	Answers
Which SDGs does the project directly address?	SDG 12 – Responsible Consumption and Production.
What strategies or actions are being implemented to achieve these goals?	Automation through Arduino, Waste Reduction, Energy Efficient Design.
How is progress measured and reported in relation to the SDGs?	Measuring the accuracy of the machine in segregating fruits based on predefined quality parameters.
How were these goals identified as relevant to the project's objectives?	Stakeholder Analysis, Literature Review, Technology Feasibility.
Are there any partnerships or collaborations in place to enhance this impact?	Local farmers and Cooperatives, Government and NGOs, Tech and Hardware Suppliers.

Sustainable Development Goals mapping – Design and Development of Quality Control System for Fruits and Veggies

Sample 2: Design and Development of Quality Control System for Fruits and Veggies (continued)



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04/04/2025

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5/4/25

INTERNAL EXAMINER

5/4/25

EXTERNAL EXAMINER

Bonafide certificate – Design and Development of Quality Control System for Fruits and Veggies

Sample 3: Design and Fabrication of Automatic Farm-Mate

DESIGN AND FABRICATION

OF AUTOMATIC FARM-MATE

A PROJECT REPORT

Submitted by

Anton Sathya	**AC**	**(727721EUMT011)**
Arutchelvan	**PR**	**(727721EUMT014)**
Ashwin	**S**	**(727721EUMT015)**
Bharath	**S**	**(727721EUMT021)**

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APRIL 2025

Title page – Design and Fabrication of Automatic Farm-Mate

Sample 3: Design and Fabrication of Automatic Farm-Mate (continued)

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Questions	Answers
Which SDGs does the project directly address?	SDG 8 –Decent Work and Economic Growth SDG 9 – Industry, Innovation, and Infrastructure SDG 12 – Responsible Consumption and Production SDG 15 – Life on Land
What strategies or actions are being implemented to achieve these goals?	IoT-based automation to improve agricultural efficiency and reduce manual labor, while optimizing resource use to minimize wastage. It promotes innovation through smart farming technology and supports sustainable land management.

Sustainable Development Goals mapping – Design and Fabrication of Automatic Farm-Mate

Sample 3: Design and Fabrication of Automatic Farm-Mate (continued)



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Certified that this project report **"DESIGN AND FABRICATION OF AUTOMATIC FARM-MATE"** is the bonafide work of **"Anton Sathya AC (727721EUMT011), Arutchelvan PR (727721EUMT014), Ashwin S (727721EUMT015), Bharath S (727721EUMT021)"** who carried out the project work under my supervision.

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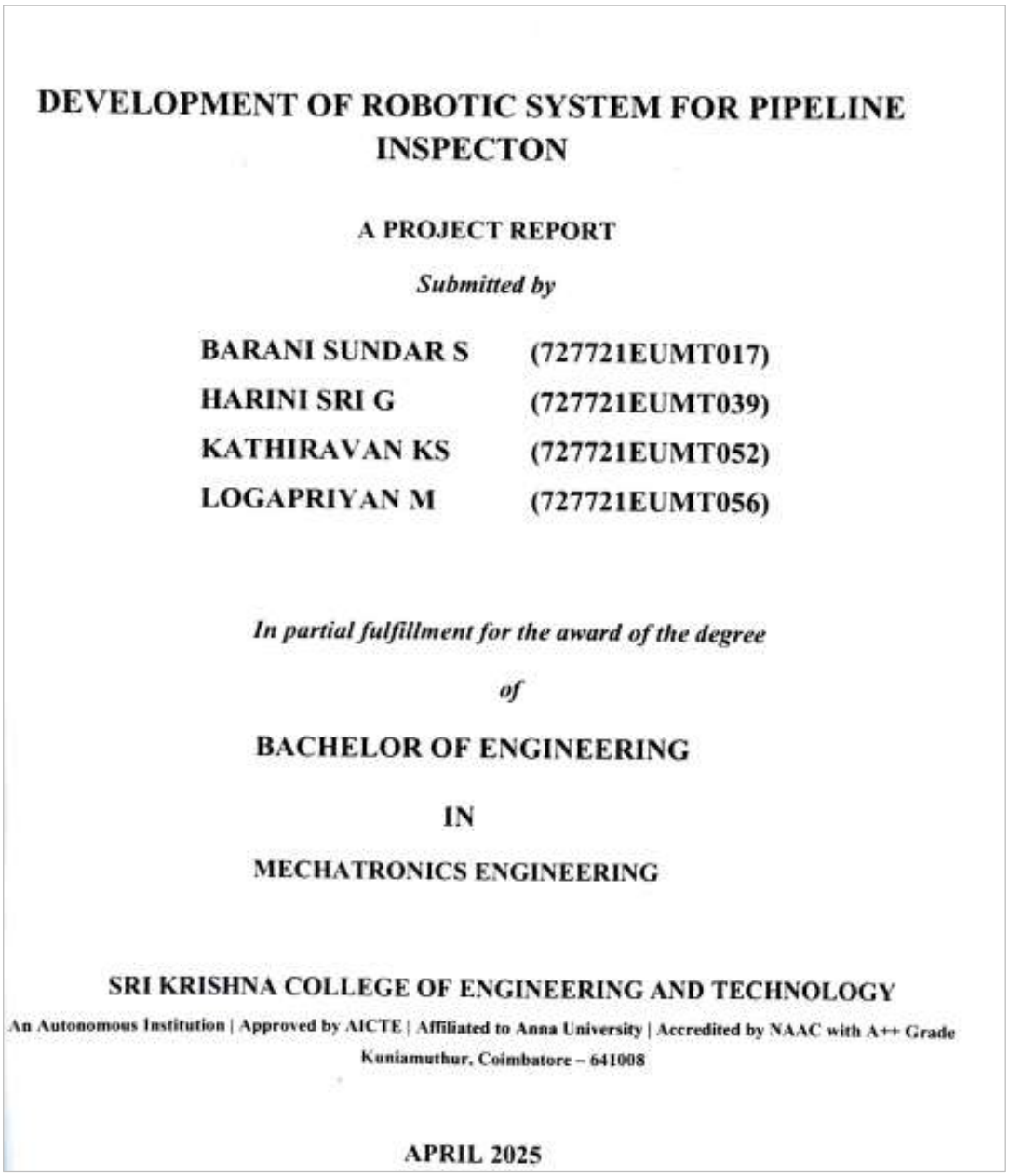
INTERNAL EXAMINER

EXTERNAL EXAMINER

Bonafide certificate – Design and Fabrication of Automatic Farm-Mate

Sample 4: Development of Robotic System for Pipeline Inspection



DEVELOPMENT OF ROBOTIC SYSTEM FOR PIPELINE INSPECTON

A PROJECT REPORT

Submitted by

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HARINI SRI G (727721EUMT039)
KATHIRAVAN KS (727721EUMT052)
LOGAPRIYAN M (727721EUMT056)

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APRIL 2025

Title page – Development of Robotic System for Pipeline Inspection

Sample 4: Development of Robotic System for Pipeline Inspection (continued)

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Questions	Answer Samples
Which SDGs does the project directly address?	SDG 9 – Industry Innovation and Infrastructure
What strategies or actions are being implemented to achieve these goals?	The project uses automation, IoT, and AI to improve pipeline inspection, enhancing safety, efficiency, and cost-effectiveness.
How is progress measured and reported in relation to the SDGs?	Real-time data, defect detection accuracy, and downtime reduction are tracked to assess impact and system performance.
How were these goals identified as relevant to the project's objectives?	It supports technological innovation, automation, and resilient infrastructure, aligning with SDG 9 objectives.
Are there any partnerships or collaborations in place to enhance this impact?	Collaboration with IoT developers and participation in TNSDC-Naan Mudhalvan Niral Thiruvizha 2.0 (Hackathon).

Sustainable Development Goals mapping – Development of Robotic System for Pipeline Inspection

Sample 4: Development of Robotic System for Pipeline Inspection (continued)



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BONAFIDE CERTIFICATE

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INTERNAL EXAMINER

EXTERNAL EXAMINER

Bonafide certificate – Development of Robotic System for Pipeline Inspection