Guidelines On B. E. Project

By

Dr. P. B. Mane

Dr. V. K. Bairagi

All India Shri Shivaji Memorial Society's

Institute of Information Technology, Pune.

Objectives of the BE Project

- To develop **student's knowledge** for solving technical problems.
- To provide an opportunity to **learn about new ideas and concepts.**
- To provide an opportunity **to work in team.**
- To **analyze, design, and evaluate** Engineering System.
- To develop the **leadership quality.**
- To improve **Written and Verbal Communication skills**.

Course Outcomes

After completion of this course students will be able to

- Apply the knowledge of mathematics, science and engineering fundamentals to the solution of complex engineering problems.
- Implement practically, ideas/real time industrial problems/ current application of respective/multidisciplinary engineering branches .
- Apply project management skill to design system/product by taking into consideration different issues such as safety,ethics,social,health,legal,cultural and cost standards.
- Use different modern tools and equipments like LabView,Xilinx,MATLAB,multisim,Keil,NS-II,spectrum Analyzer, Logic analyzer,MSO,Vector Network analyzer etc.
- Participate in National/International paper presentation/publication/project competition activities.
- Prepare project Report (proposals) and present their project work in English.

B.E. Projects-Work Program

Sr.No.	Schedule	Target Dates
1	Finalization of project and submission of synopsis.	20/07/2017
2	Final approval of project Title	01/08/2017
3	Finalization of block diagram and literature survey	18/08/2017
4	Presentation based on the idea of their project and study of at least three existing systems.	25/08/2017
5	Finalization of circuits/ system hardware/ software algorithm	12/09/2017
6	Component list (Budgeting of System)	22/09/2017
7	Presentation based on the work carried out (analysis and design)	29/09/2017
8	Submission of pre-report	02/10/2017
9	Bread board testing and prototype work	06/10/2017
10	Circuit layout and PCB	15/12/2017
11	Hardware assembly	16/01/2018
12	Presentation based on the completion of design and implementation	20/01/2018
13	Presentation based on the complete project including results and analysis.	15/02/2018
14	To send paper to only International Journal(UGC approved) and participation in project Competition.	27/02/2018
15	Report Submission.	30/03/2018

Format of Synopsis

- Institute heading
- Title of Project
- Name of the Student and Guide
- Group no.
- Introduction
- Brief Literature Survey
- Problem Statement
- Objectives
- Methodology
- Block Diagram
- Expected Results
- References (at least 5-6 references)
- Signature of Student and Guide
- Maximum Number of pages for synopsis=2 to 3

Format for the Project Report-Phase-I

- The content of Project report for Phase-I will be the same as synopsis content.
- Every topic must be in detail.

Format for the Project Report-Phase-II

1. Title Page	13. Specifications of the System
2. Certificate Page	14. Block diagram of the System and its explanation.
3. Certificate from Company (Sponsored)	15. Hardware Design (if any)
4. Abstract	16. Software Design (if any)
5. Index Page	17.Tests and Results.
6. Acknowledgements	18. Conclusion
7. List of Tables	19. References
8. List of Figures	20. Summary of project participation and paper publications.
9. List of Abbreviations	21. Hard copy of published paper at **International Journal and Certificates.**
10. Introduction (2-4 pages)	
11. Literature Survey	22. Appendix I, II
12. Aims,Objectives,Methodology	23. CD must attached at the end of the report

Instructions to Students for Preparing Project Report

- Project Presentation and Project-reports have to be **prepared in LaTeX Only.**

- Project **Schedule** has to be prepared in **PERT/GANTT** chart or Open-workbench software (open access) only.

- All the Figures of their Projects have to be prepared using **CorelDraw or AutoCad or Catia Softwares or Flash or RF Flow or Google-sketch**.

- All the PCBs or Analog/Digital Electronic circuits have to be simulated using **OrCad's schematic, Pspice or Multisim or Proetus.**

Format of Title Page

A

Project Report On

"AUTOMATIC DRILLING SYSTEM USING PLC"

Submitted By

Mr. PRATIK A. MEHTA (B80254652)
Mr. AKSHAY A. SAGARE (B80254653)
Mr. VAIJANATH S. SAMSE (B80254637)

Guided By

Dr. A. D. RAHULKAR

Bachelor Of Instrumentation Engineering

UNIVERSITY OF PUNE

All India Shri Shivaji Memorial Society's
INSTITUTE OF INFORMATION TECHNOLOGY,PUNE

ACADEMIC YEAR 2013-2014

Format of Certificate

CERTIFICATE

This is to certify that Project Report entitled

"AUTOMATIC DRILLING SYSTEM USING PLC"

Submitted by

Mr.Pratik A. Mehta (B8025j652)
Mr.Akshay A. Sagare (B8025j653)
Mr.Vaijanath S. Samse (B8025j637)

is the record of bonafide work carried out by them in partial fulfillment of the requirement for the award of the Degree of **Bachelor Of Engineering (Instrumentation and Control)** as prescribed by the University of Pune in the Academic Year 2013-2014.

Prof. Dr. A. D. Ralulkar
(Guide)

Prof. Mr. H. P. Chaudhari
(Head of Department)

Dr. P. B. Mane
(Principal)

Abstract Contents

- Introduction.
- **Review of existing work with Limitations.**
- **Work carried out .**
- **Comment on Result.**

Example: Abstract

Work done

This report presents a shift, scale, and rotation invariant technique for iris feature-representation and fused post-classification at the decision-level to improve the accuracy and speed of the iris-recognition system.

Importance

Most of the iris-recognition systems are still incapable for providing low false rejections due to a wide variety of artifacts and are computationally inefficient.

How carried out the work

In order to address these problems, effective and computationally efficient iris features are extracted based on a new class of trip half-band filter bank (THFB).

Methodology

First, a new class of THFB designed by using generalized half-band polynomial suitable for iris feature extraction. This THFB satisfies perfect reconstruction and provides linear phase, regularity, better frequency-seleivity, near-orthogonality, and good time-frequency localization. The uses of these properties are investigated to approximate iris features signifi cantly. Second, a novel flexible k-out-of-n postclassifier is explored to achieve the robustness against possible intraclass iris varions.

Quantitative Result

The proposed system has been achieved 98.2% accuracy on UBIRIS, and IITD databases.

Achievement

The proposed scheme is capable of handling various artifacts, particularly segmentation error eyelid/eyelashes occlusion, shad ow of eyelids, head-tilt, and specular reflections during iris verification.

How to Write Introduction

1. Outline the problem you are working on.

2. Why it is interesting and what are the challenges?

3. List your aims and goals.

- Aim is something you intend to achieve.

- Goal is something specific you expect to deliver.

4. Give an overview of how you carried out the project.

Continue..

5. A brief overview of the rest of the chapters must be included at the last paragraph of introduction as follows:

Chapter 2 presents Auditory features based on Gamma-tone filter-bank. Mel-scale and Bark-scale based Gamma-tone features are brieflydiscussed in this Chapter. Also experimentation has been carried out to evaluate the performance.

Chapter-3 reviews 1-D two channel FBs and addresses the problems with recently designed two-channel FBs. The two-channel FB problem formulates using three step ladder structure (THFB). The properties of this proposed THFB have been discussed.

In Chapter-4, the proposed class of THFB has been used in iris recognition system by investigating its properties to extract the discriminating iris features.

The construction of DWFB and RDWFB has been described in Chapter-5. This chapter also discussed the iris feature extraction algorithm based on a combined DWFB and RDWFB.

The report is concluded in Chapter-6.

How to Write Literature Survey

- Literature Survey

- Problem Statement

Literature Survey

Find the latest material relevant to the project topic which is being explored.

1. Identify the "big names or researchers" and best publications in your working area.

2. Collect the most recent books, most popular publications from IEEE Transactions, Elsevier, Springer.

(papers or thesis will be most helpful for developing the project.)

3. The minimum number of the papers to be collected between Ten (10) to Twenty (20) papers.

Literature Survey

- Explain each paper in one paragraph that should include following points:

1. Summarize all the major points of your selected paper i.e. what kind of new work, results, its conclusion (Findings and conclusion)

2. Write the strengths and limitations of your selected paper.

3. Cite this paper by numbering inside the square bracket [].

- Make comparisons of the selected papers and give technical comments.

- Summary of comparison is to be given in a tabulated form in the last page.

Example to Cite and Review the Paper if Contains More than Two Authors in the Reference List

Sun and Tan [6] proposed ordinal measures scheme for iris feature representation in order to characterize qualitative relationships between the iris regions rather than precise measurements of iris image structures. They have preprocessed the original iris image as given in [5] and [2]. In their work, multilobe differential filters (MLDFs) based on 2-D Gaussian filter have been presented for ordinal iris feature extraction. These ordinal filters are used on 1024 densely sampled image regions to obtain 128 bytes ordinal code for every iris image with flexible interlobe distance. The error rate has been estimated using bootstrap method on the measured Hamming distances between two ordinal templates of the same class.

However, this method requires more number of parameters to improve the performance.

If contains one or two authors. Write the last names of the authors.

Limitations of this work

Reference in the Reference List

[6] Z. Sun and T. Tan, "Ordinal measures for iris recognition," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 31, no. 12, pp. 2211-2226, December 2009.

Example to Cite and Review the Paper if Contains More than Two Authors in the Reference List

If contains more than two authors.Write the last names of the first authors with *et al.*

Sun *et al.* [6] proposed ordinal measures scheme for iris feature representation in order to characterize qualitative relationships between the iris regions rather than precise measurements of iris image structures. They have preprocessed the original iris image as given in [5] and [2]. In their work, multilobe differential filters (MLDFs) based on 2-D Gaussian filter have been presented for ordinal iris feature extraction. These ordinal filters are used on 1024 densely sampled image regions to obtain 128 bytes ordinal code for every iris image with flexible interlobe distance. The error rate has been estimated using bootstrap method on the measured Hamming distances between two ordinal templates of the same class.

However, this method requires more number of parameters to improve the performance.

Limitations of this work

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Problem Statement

- What is the issue that you want to address?
- Why it is need to address this issue?
- How your project can solve this issue?
- Who gets benefits from the project?

Example: Problem Statement and objectives

Problem Statement:

To design separable and non-separable filter banks for the effective and efficient iris representation and post-classifier to reduce the FRR.

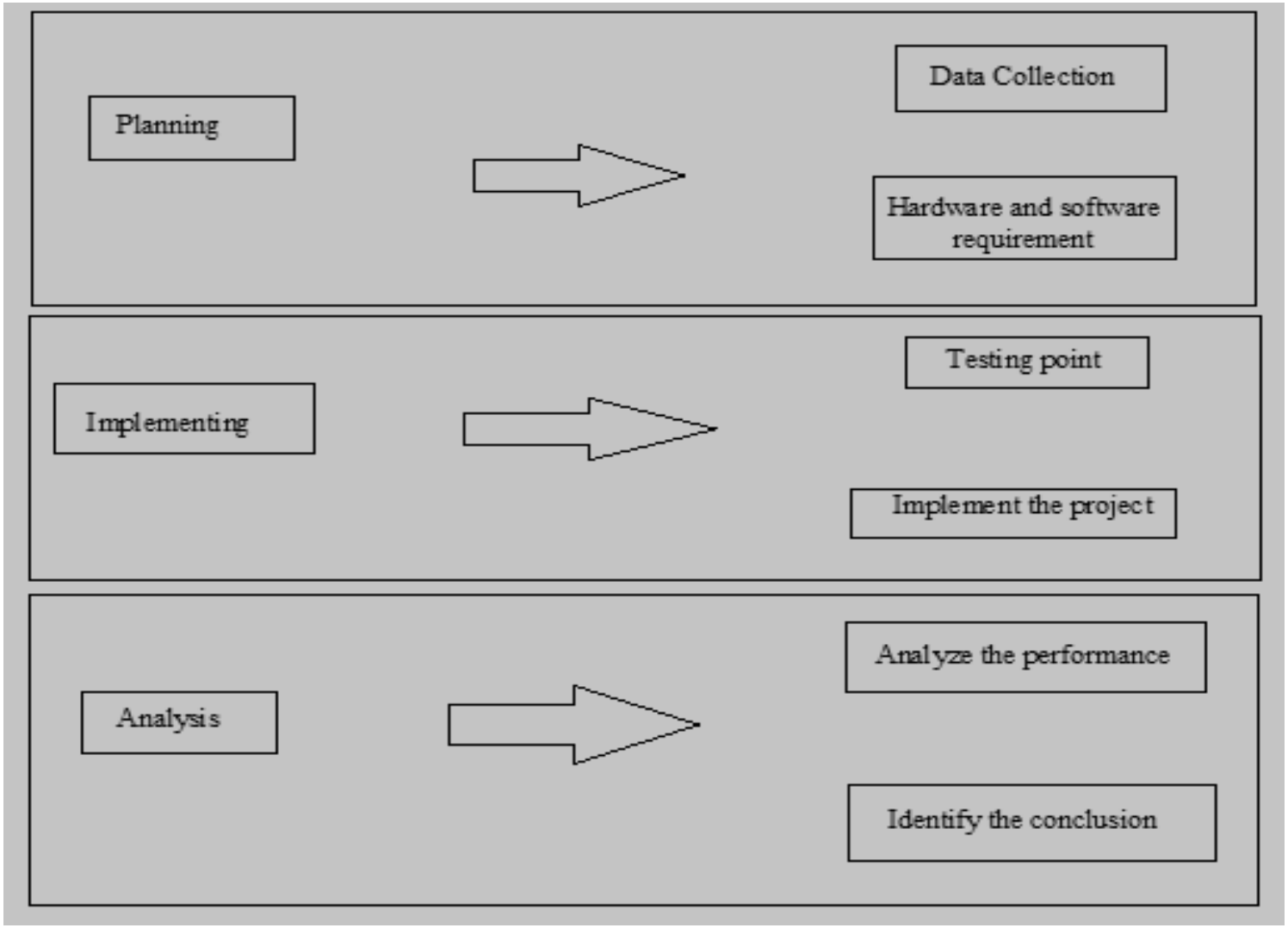
Objectives:

1. **To design separable filter-banks.**
2. **To design non-separable filter-banks.**
3. **To design classifier.**

Methodology

- Method adopted to solve the problem.
- Give an overview of how can you carry out the project.
- Step-wise approach to the solution.

Methodology



Hardware/Software Design

- Describe the design of what you have created.
- Start with application block diagram and the components that make the block diagram.
- Give a description of the design of the component that make up the block diagram.
- Provide the implementation detail as necessary.
- Necessary to write the Algorithm of the Project.

How to Write Experimental Result and Analysis

- Include the Experimental Setup used for testing the system.
- Include the tables and graphs that shows your quantitative results.
- Write in sentences the thorough evaluation of the result being presented.
- Next, write the analysis on your obtained results.

How to Write Conclusion

- Summary of what the project has been achieved.

- Must include your quantitative results and logical analysis of the result presented in the project report.

Project Management

- Include Project schedule signed by project guide.
- Meeting dates with guides.
- Bill of Material

How to Write Reference

- Number all the references.
- References has to be written in IEEE Transactions format.
- Use a chronological bibliography.
- Each listed reference in the bibliography must be cited in the text of the report.
- For a book, give the name(s) of author(s), title of the book, edition, chapter number, page number, publisher, location and year of publication.

For ex. [3] A. D. Rahulkar and R.S. Holambe, *New Wavelet filter-bank based feature extraction Schemes,* Edition 1, Ch. 1-4, pp. 145-198, Springer, New York, 2014.

How to Write References

- For a journal/conference paper, give the name(s) of authors, “title of paper”, *name of journal/conference*, volume and issue number (for journal), page numbers, month and year of publication.

  Example:

  A. D. Rahulkar and R. S. Holambe, “A New Class of triplet half-band filter bank based iris feature extraction and recognition using k-out-of-n:A post-classifier”, *IEEE Transactions on Information forensic and security*, vol. 7, No. 1, pp.230-240, February, 2012.

- For World Wide Web page, write the **URL**.

Appendix

- Important Data sheet
- Lengthy Derivations
- Raw Experimental Observations

Should be presented in separate appendices which shall be numbered in Roman capitals (e.g. Appendix I, II, IV etc.)

Marksheet for evaluation

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INSTITUTE OF INFORMATION TECHNOLOGY, PUNE-01

Department of Instrumentation and Control Engineering.

Mark sheet for B. E. Project Presentation

Year 2009-10 (Semester II)

Sr. No.	Project Group	Project Topic Date of Presentation	Total Marks (50) Work Done(20), regular meet with Guide(05), Knowledge(15), Stage wise Implementation (10)	Guide Name & Sign
1	Darbha Srilakshmi S Jagtap Neha S Menon Malavika R	Development of intelligent langumuir through for nanoscience research		Mr. H. P. Chaudhari
2	Gunale Pravina A Pawar Pooja Ramesh	Universal Environmental Meter		
3	Gokhale Madura B Kulkarni Ketki C	Visitor management system.		
4	Bhavsar Gauri P Anupama Kumari	Digital steganography for secret information retrieval		Mr. B.M.Kardile
5	Jadhav Neha M Kulkarni Bhavana A	Intelligent system for monitoring battery-bank health		
6	Doshi Snehal Mohan Thakur Prajakta P	Centralized monitoring of infusion pump.		
7	Akriti Priyadarshini Bopardikar Snehal A	Face recognition		Mr. N.S.Pathak
8	Kamat Deepti Rajiv Kulkarni Sayali P	DLC based controlled cabinet cooling with Vortex tube		

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INSTITUTE OF INFORMATION TECHNOLOGY,PUNE

Department of Instrumentation and Control

B.E. Project Monitoring Sheet (SEM-I/II)

Name of Project:_____ Sponsored Company:_____

Name of Students: 1)_____ 2)_____ 3)_____

Internal Guide:_____ External Guide:_____

Sr. No.	Date	Work Done	Work to be Done	External Guide	Internal Guide

Self Evaluation sheet attached at the end of report

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Department of Instrumentation and Control Engg.

Self Evaluation Sheet

Name of the Project	
Name of the Student	
Name of the Student	
Name of the Student	

File of Literature survey	Design	Implementation	Test & Results	Attendance on the Project Day	Work according to plan activity	Maintaining Log book	Paper presentation or participation	Project Exhibition Participation	Award , prize if any
(5)	(20)	(20)	(20)	(5)	(10)	(5)	(5)	(5)	(5)

Observation and Comments of Guide

Name of the student | Sign of the Student | Sign of Guide

1.

2.

3.

Note: The Evaluation will be verified by Project Evaluation Committee.

Format for Log-Book Assessment

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ASSESSMENT OF LOG-BOOK

Marks	Description
5 (Very Good)	• Have very frequent meetings with the guide. • Shows a genuine interest in the project and is exceptionally hard working and independent. • Project plan is exceptionally well prepared, systematic and appropriate. Conducts work according to plan and adapts well to changes.
4 (Good)	• Meets with the guide regularly. • Shows an interest in the project and is hardworking, and independent. • Project plan is well prepared, systematic and appropriate. • Mostly work is conducted according to plan and can adapt to changes.
3 (Fair)	• Meets with the guide once in a while, but not frequent enough. • Shows some interest in the project but in not fully committed. • Moderately hardworking, lacks inquisitiveness and is dependent on the guide half of the time. • Project plan needs improvement and should be more systematic and appropriate. • Work is not completely conducted according to plan and has some difficulty adapting to changes.
1 (Poor)	• Very seldom meets with the guide. • Shows little interest in the project and lacks commitment. Has issues with completing tasks, lacks and is dependent on the guide most of the time. • Project plan is flawed and needs to be more systematic and appropriate. • Work is not conducted according to plan and has major difficulty adapting to changes.
0 (Very Poor)	• Hardly ever meets with the guide. • Shows no interest in the project has major issues with completing tasks, shows no signs of inquisitiveness and is highly dependent on the guide. • Project plan is seriously flawed. • Seldom does work and cannot adapt to changes.

Format for Presentation Assessment

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ASSESSMENT OF PRESENTATION S BY GUIDES AND EXAMINERS

Marks	Description
5 (Very Good)	• Flawless presentation, exhibiting highly commendable skills. • Exceptionally well-prepared and attractive slides/poster that clearly covers the main aspects of the project. • Questions answered exceptionally well and with ease.
4 (Good)	• Impressive presentation, exhibiting commendable skills. • Well-prepared and attractive slides/poster that covers the main aspects of the project. • Questions answered well and rather convincingly.
3 (Fair)	• Average presentation. Skills require improvement. • Adequately prepared slides/preparation of slides/poster with important aspects of the project being left out. • Some questions could not be answered convincingly.
2 (Poor)	• Unimpressive presentation due to lack of skills. • Very little thought given to the preparation of slides/poster with important aspects of the project being left out. • Failed to answer most of the questions convincingly
1 (Very Poor)	• Seriously flawed presentation due to little or no skills. • No thought given to the preparation of slides /poster with most aspects of the project being left out. • Unable to answer the questions convincingly.

Instructions to the Students

- Synopsis has to be submitted in the prescribed format.
- Students must maintain the **weekly progress notebook** (Log-book) in the specified format: [date of meeting, work assigned and carried out, future planning, decision taken, Sign of guide & students].
- Student can go to the company for the project work on the day(s) other than those mentioned in the timetable only after taking the permission from guide and GFM.
- The attendance will be considered after submitting the attendance certificate from the respective company.
- It is mandatory **to test and assemble the circuit in the college lab** before finalizing the artwork and layout of the PCB.
- Fabricated hardware should be enclosed in a **proper enclosure** designed by the students.

Instructions to Students

- Plagiarism is a very serious offence and, where proven against a student, may result in disqualification from the examination of the project.

- The final project reports are to be uploaded to AICTE portal.

- The project report must be checked by their respective guide before **printing the final copy**.

- Each project group has to publish at least one paper at **International Journal till 27th February**. It is important to note that guide must approve the paper draft before student communicating their paper to the Journals.

- All the project groups have to participate at least in one **project competitions before 20th March.**

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Instructions to Students

- The system should be 100 % working as per their specification and objectives.
- Sponsorship letter of company is compulsory and is to be **submitted to project coordinator and project-guide.**
- Change of project /any modification in the aim/objective can be done only with the permission of the respective guide, project co-ordinator and HOD.
- University project examination may be conducted on any day including Saturday, Sunday and any other holiday. In this context, the project group has to submit the letter (NOC) to the Department regarding the conduction of examination on above days at their place.
- The company guide should be present at the time of examination.

Instructions to Guide and Project coordinators

- Based on students' presentations, the **record of mark-sheet** will maintain by **project co-ordinator and project guide.**
- Every project guide will monitor the participation of their students in various project competitions.
- Collect all the certificates of students' participation in various project competitions.
- The format of **project report** will be displayed by **project co-ordinator**. Students must have to prepare their **project report** according to the displayed format.
- Mandatory for project guides to visit the company which has sponsored them the project group.
- The travel arrangement to the company should be made by the respective project group.

THANK YOU