Project Name: Design and Development of Multi-Band RFSoC for Proximity Sensor (MB RPS)

**Application** 

## **DETAILED PROJECT REPORT (DPR)**

(To be submitted by industry after signing & stamping)

NAME OF THE PROJECT

NAME OF THE INDUSTRY

DO NOT CHANGE THE CONTENTS OF THIS FORM; ANY CHANGE WILL RESULT IN THE REJECTION OF THE APPLICATION

Project Name: Design and Development of Multi-Band RFSoC for Proximity Sensor (MB RPS)

Application

## <u>Documents to be submitted by Industry</u> (Each page to be signed and stamped by industry)

SN	Item	Document No.	Please mark Yes / No against document attached
i.	Technical - PART -A	DPR.1	Yes / No
	Detailed Project Report		
	(Technical proposal as per format		
	attached from industry on the basis of		
	which technical evaluation of industry		
	will be carried out).		
	Listed documents in DPR proforma to be		
	enclosed with Part- A		
ii.	Acceptance of Special Terms & Condition	DPR.2	Yes / No
	and Eligibility criteria compliance on		
	Industry's letter head - to be enclosed with		
	Part- A		
iii.	Undertaking & Non-Disclosure Agreement	DPR.3	Yes / No
	(NDA) by the industry - to be submitted in		
	advance for obtaining Functional and		
	Operational requirements of PDD		
iv.	Financial Bid -PART -B	Price Bid (PB.1)	Yes / No
	Price bid to be submitted as per proforma		
	on industry letter head stamped and		
	signed in separate sealed envelope		

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## **DETAILED PROJECT REPORT (DPR)**

## PART A

## **TECHNICAL BID**

Section 1	BASIC INFORMATION				
Section 2	INDUSTRY PRO	INDUSTRY PROFILE			
Section 3	PROJECT IMPL	PROJECT IMPLEMENTATION INFORMATION			
Section 4	PROPOSED TECHNICAL SOLUTION				
	Subsection 1 Detailed Project report				
	Subsection 2 Market Analysis				
	Subsection 3 Technical Milestones for Project execution				
Section 5	MAINTAINABII	LITY & LIFE CYCLE REPORT			

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## <u>Documents to be uploaded with Detailed Project Report (DPR) – Part A (Technical)</u>

S.	Section of DPR-		Name of the Document	Please tick
No.	Part A (Technical)			against
				Document
				uploaded
1.	SECTION 1: BASIC	i.	Certificate of Incorporation	
	INFORMATION	ii.	GSTIN Registration Certificate	
		iii.	UDYAM Certificate	
		iv.	DPIIT Certificate	
		v.	PAN card of Company	
2.	SECTION 2:	i.	Article of Association submitted to RoC	
	INDUSTRY	ii.	Memorandum of Association submitted	
	PROFILE		to RoC	
		iii.	Audited Financial Statement (last 05	
			Years / since incorporation)	
		iv.	Income tax return (last 03 years)	
		v.	Proof and details of Incubation, if any	
			(for Start-ups)	
		vi.	Corporate Presentation limited to 08	
			Slides	
		vii.	Brief details of Indigenous	
			manufacturing capability	
		viii.	Details of Research & Development	
			Facility	
		vi.	Details of Quality Control Facility	
		ix.	Industry brochure, if any	
3.	SECTION 3:	i.	MoU with Academic Partner if	
	PROJECT		applicable	
	IMPLEMENTATION	ii.	Any grant/grant-in-aid received by any	
	INFORMATION		government scheme	
		iii.	Design Capability	
		iv.	MoU with Consortium Partner	
		V.	Documents from Consortium Partner:	
			Certificate of Incorporation	
			GSTIN Registration Certificate	
			UDYAM Certificate	
			DPIIT Certificate	
		e.	PAN card of Company	

Project No.: DTDF/06/13666/RCI/MB-RPS/D/L/M/01
Project Name: Design and Development of Multi-Band RFSoC for Proximity Sensor (MB RPS)
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4.	SECTION 4: PROPOSED	i.	Proposed technical solution for the development of the technology	
	TECHNICAL SOLUTION	ii.	Roadmap for achieving the proposed outcome / deliverables.	
		iii. iv.	List of Infrastructure needed to procure in order to execute the project along with tentative cost estimates of each item  Technical Presentation limited to 10	
		v. vi.	Slides.  Self-Declaration document on ethical/legal/safety/regulatory issues Certification for ISO / CEMILAC / Fire Safety / CMM Any other additional document relevant	
		V 11.	to the project planning / execution.	

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#### **SECTION 1: BASIC INFORMATION**

#### (All fields are mandatory in this section)

- 1. Industry Name:
- 2. Industry Type:
- 3. Details of registration:

CIN	GSTIN	MSME / UDYAM	DPIIT registration	PAN
		Number	number (If applicable)	

- 4. Registered Address:
- 5. Project Execution Location:
- 6. Communication Address (if different from Registered Address):
- 7. Designated Contact Person:
  - a. Email Address:
  - b. Contact Number:
  - c. Position/Designation:

#### **SECTION 2: INDUSTRY PROFILE**

- 1. Profile/ Description (Min 150 words): (Attach Brochure, if any)
- 2. Details of Directors
  - a. Name
  - b. Mobile Number
  - c. Work Experience
  - d. Nationality
- 3. Details of Investors
  - a. Name of Individual / Company
  - b. Amount Invested (In INR lakhs)
  - c. Share holding Pattern (In %)
- 4. Date of Establishment:
- 5. Indian Ownership: Yes / No

(At least 51% ownership stake held by an Indian citizen or entity to be considered an Indian entity):

- 6. Strength of Manpower (No.): \_\_\_\_\_
- 7. \* Memorandum of Association of Company\*: (Mention Document No if attached)

(Attach Article\_of\_Association-Company Name)

8. \* Audited Financial Statement (Last 05 Years / since incorporation if incorporated last 5 years):

#### (Mention Document No if attached)

- a. Annual Turn Over
- b. Annual Return
- c. Directors Report
- d. Auditors Report
- e. Profit & Loss Statement (Audited)
- 9. \* Income Tax Return (Last 03 Years/ Since incorporation if incorporated less than 3 Years). (Mention Document No if attached)
- 10.\* Latest certificate of Incorporation by the Registrar of companies (ROC):
  (Mention Document No if attached)

- 11. Incubator Name (If Startup):
- 12. Attach a proof of Incubation, if any: (Mention Document No if attached)
- 12. Investment in R&D in Last Three Years, if any:
- 13. Indigenous manufacturing capability (relevant to the project):
  - **A.** Plants and Machinery
    - i. List of Equipment Available
  - ii. Product Make
  - iii. Quantity
  - iv. Cost of Equipment in terms of Indian Currency
  - **B.** Components Manufactured Indigenously relevant to the project- Provide list

#### 14. Indigenous Design Capabilities in the subject field:

i.	Number of dedicated manpower for R&D in	1.
	subject field and their expertise	2.
		3
ii.	Overall R & D Facility: (Add details if any)	1.
		2.
		3
iii.	R&D facility relevant to the project: (Add details	1.
	if any)	2.
		3
iv.	R&D expenditure as percentage of turnover on	1.
	strategic/Defence Systems	2.
		3
v.	Inspection and Quality Control Facilities: (Add	1.
	details if any)	2.
		3

#### 15. Patents:

i. Does the applicant or the applicant company own any background IP related to this project. If yes, give details.

- ii. List of patents that appear to cover any part of the technology of interest or similar (and possibly overlapping) technologies and thereby restrict the freedom-to-operate in the envisaged area. (Please mention patent number, patent title and patent assignee)
- iii. If there are patents that are overlapping and may restrict FTO, does the applicant have the required license/s to practice these inventions for the purposes of the proposed project? Please provide license agreement details if any or provide information of the proposed next steps to obtain said license/s.
  - a. Name of Inventor
  - b. Number
  - c. Title
  - d. Patent Filed by
  - e. Filing Status
  - f. Usage
  - g. Additional Information, if any

#### 16. Products/ Technologies

- List of technologies or products developed that might be relevant to the project.
  - Product / Technology Name
  - Stage of Development
  - Year of Development
  - o Relevance to Project

#### 17. TOT (Transfer of Technology)

- ➤ ToT with Indian Partners (Received / offered): Number of ToT done with Indian Partners (Departments/Ministries/ Organizations) and their value in terms of Indian currency (Maximum value in terms of Indian Currency will be taken as reference and then accordingly rest proposals will be given marks proportionately)
- ➤ ToT with Foreign Partners (Received / offered): Number of ToT done with Foreign Partners and their value in terms of Indian currency (Maximum value in terms of Indian Currency will be taken as reference and then accordingly rest proposals will be given marks proportionately)

S. No.	Technology Name	Organisation Name	Mode	Year

#### 18. Details of involvement in TDF projects:

Details	Lead Development Agency
	(Industry)
Projects Completed	
Projects Short Closed	
Projects currently under execution	
Projects Currently applied for	

Note: \* Compulsory documents to be attached with DPR form.

#### **SECTION 3: PROJECT IMPLEMENTATION INFORMATION**

#### 1. Expected Project Duration (in Months):

- 2. Academic Partner (if any):
  - > MoU with the Academic Partner including scope of work and terms of references
- 3. Has the company received any grants/grants-in-aid by any government scheme for a similar technology: Yes / No

(If Yes, then elaborate on the support received from and amount received)

4. What is the Indigenous design capability (in percentage %) after successful development of proposed technology:

#### 5. Consortium Partner Details:

- i. Name of the Consortium Partner:
- ii. Registered Address:
- iii. MoU with Consortium Partner including work share matrix for this project execution:
- iv. Documents from Consortium Partner:
  - a. Certificate of Incorporation
  - b. GSTIN Registration Certificate
  - c. UDYAM Certificate
  - d. DPIIT Certificate
  - e. PAN card of Company

#### **SECTION 4: PROPOSED TECHNICAL SOLUTION**

#### **Subsection 1: Detailed Project Report**

#### 1. Broad understanding of the project:

Define your understanding about the problem and proposed solution along with the final outcome/deliverables

- 2. Elaborate the proposed technical solution for this requirement in terms of subsystems and sum-modules with necessary figures and diagrams:
- 3. Elaborate Measurable outcomes of the project:
- 4. Road map for achieving the proposed outcome/deliverables:
  - > The description should cover the following points:
    - Strategy and/or methodology of work.
    - Scope and boundaries of the work, including any issues that will not be covered.
    - Data analysis (sample size, data collection)
    - Work share (Academic Partner) or any other Collaborator

#### 5. Describe the specific innovation in the proposed solution and its novelty:

- Explain how your idea is innovative and how it is different from the existing products in the markets or current state-of-the-art. Tabular representation of the difference between your idea and the other products in market or competitive product which are under development will be appreciated. Concrete market data is encouraged. Comparison vis a vis global tech available in terms of quality and cost.
- 6. Has any preliminary work been carried out? Give status of work done? If no, please provide the background details.
- 7. Details of Equipment Needed for the Development:

(Please provide List of Infrastructure i.e. tangible capital equipments needed to procure in order to execute the project along with tentative cost estimates of each item.)

# 8. Execution of projects for development of critical technology in India and abroad in the past, if any:

S. No.	Project Name	Military User	Project Cost (in INR)	Funding Agency
1.				
2				

# 9. Execution of projects for military users in India and abroad in the past, if any:

S. No.	Project Name	Military User	Project Cost (in INR)	Funding Agency
1.				
2				

# 10. Execution of projects for other users in India and abroad in the past (If any):

S. No.	Project Name	User	Project Cost (in INR)	Funding Agency
1.				
2				

- 11. Feasibility Analysis Report of the Project, if any:
- 12. Risk Analysis & Scope of work & its comparative analysis with proposed solution
- 13. Interoperability across the services:
  - Provide prospects of using developed technology for various military / paramilitary users and other civil applications, if any

#### 14. Relevant References:

➤ Please enter references that might have been utilized in creating the proposal and are helpful for Technical Committee.

#### **Subsection 2: Market Analysis**

#### 1. Opportunity

➤ What is the potential societal and market impact?

#### 2. Future Plan of Commercialization

- Commercialization plan should indicate:
  - Market entry strategy
  - o Production scale up and Pricing

#### 3. Relevant References:

(Please enter references that might have been utilized in understanding the market)

- 4. Please attach self declaration document on ethical/legal/safety/regulatory issues involved, if any :
- **5. Please attach any certification available with you or the Incubator** (ISO/CEMILAC/ Fire Safety, CMM, etc)

#### **Sub-section 3: Technical Milestones for Project Execution**

	Industry Name: < <add company="" here="" name="">&gt;</add>					
Milestone no.	Time (in months)	Major Activity Details	Sub- activity Details	Deliverables for the Milestone		
1		Preliminary Review  Finalization of RFSoC specification and link budget design Completion of RFSoC schematic design Release of Approved PDR Documents including compliance Layout Design Review Completion of the RFSoC layout design and post-layout simulation Release of approved pre-silicon verification document and it compliance with finalized RFSoC specifications in MS1 Tape-out of the RFSoC	1. 2. 3.  N			
2		■ Integrated RFSoC layout and Evaluation PCB board design ■ Design of RFSoC evaluation board, its simulation with RFSoC and generation of 3-D model ■ Release of approved PCB schematic and layout files for fabrication ■ Completion of	1. 2. 3.  N			

	Design, Development & testing of identified Critical technology and component Release of Approved CDR Document including compliance of simulation and measurement results of RFSoC at industrial grade	
3	System level design and testing  Design and development of 3-channels proximity sensor system for RPF application and 1-channel proximity sensor system for radio-altimeter application Testing and evaluation of RFSoC based system	1. 2. 3.  N
4	Qualification of proximity sensor	1.
	<ul> <li>Acceptance and Qualification test of 3-channels proximity sensor system for RPF application and 1-channel proximity sensor system for radio-altimeter application</li> <li>Release of approved documents and its compliance with targeted Environmental specifications supplied by user.</li> </ul>	2. 3.  N
5	<ul> <li>Final production plan of deliverables</li> <li>Documentation and ToT /IPR</li> </ul>	1. 2. 3.  n

# Final Project Deliverables: Hardware (Include prototype No.): Software (Includes Source Code): Documents (Include all reports/PDR/CDR/ATP/QT/any other): Software (Include all reports/PDR/CDR/ATP/QT/any other): Joint IPR & Transfer of Technology (ToT) Document

Signature and Stamp of Authorised Signatory of Development Agency (Lead industry for the development of specified product/technology)

#### **Section 5: MAINTAINABILITY & LIFE CYCLE SUPPORT**

(The Development Agency has to provide life cycle support for complete system)

#### 1. Proposed methodology for life cycle support:

- a) Plan for support for sub-systems & components procured from abroad and their availability during the lifecycle of the system:
- b) Plan for support for sub-systems & components procured from within the country and their availability during the lifecycle of the system

#### 2. Adherence to timelines, minimization of slippages, cost overruns:

a) For past executed projects:

S. No.	Project Name	User	Funding Agency	Project Cost (in INR)	Project Timelines (in Months)	Time Overrun, if any	Cost Overrun, if any
1.							
2							

b) Plan proposed for executing current project (Risk mitigation plan for successful execution of project):

#### 3. Production

- a) Details of production philosophy
- b) Estimated unit cost as part of production

vv	End of Document	vv
X X		X X