SEMI-CONDUCTOR LABORATORY
S.A.S NAGAR

Record of replies against SCL's RFP No. SCL/PS/45088/2025 (Tender ID on CPPP 2025_SCL_849478_1) for Augmentation & Enhancement of Existing 8-inch Fab of Semi-Conductor Laboratory (SCL), India.

The queries and the replies thereof are indicated in the Annexures –I &II.

The prospective bidders must take the responses/clarifications as recorded herein into account while submitting the proposal to SCL.

Head, Purchase & Stores Division

Vendor-1

Annexure I

Clarifications Requested				
S. No.	**RFP Page No– Section– Subsection**	**Content of the RFP**	**Points of Clarification**	**SCL Reply**
1	RFP Page No– 122 Section– Appendix 16 Sub- section. 1	MES should be a customizable module-based software system that is supposed to help in achieving and maintaining paperless fab operations	• Is SCL looking to build new MES software from scratch or would like to buy COTS MES SW and customize it?	Bidder to match as per SCL's RFP specification. SCL is looking for Industry Standard & proven MES Software. See the eligibility criteria of Bid package 3
2	RFP Page No– 122 Section– Appendix 16 Sub- section. 1	MES should be a customizable module-based software system that is supposed to help in achieving and maintaining paperless fab operations	• What MES application is currently used by SCL? • What are the requirements for migrating from the existing MES to the new MES?	Bidder to implement a fresh setup at SCL as per RFP
3	RFP Page No– 134 Section– Appendix 16 Sub- section. 1. I	Integration with CIM module	We assume that all CIM Modules are already available with SCL and that the scope of work does not include modifications to these modules Can you please confirm?	Bidder to provide all the requirements as per RFP
4	RFP Page No– 134 Section– Appendix 16 Sub- section. 1. I	Integration with CIM module	• MES should interact with all these modules. What are their technology/interface details? • Do you have documentation on the CIM modules?	All the modules to be provided as per RFP.
5	RFP Page No– 134 Section– Appendix 16 Sub- section. 1. I	Integration with CIM module --> Equipment Automation	• Does MES or Equipment Automation need to ensure wafer slot integrity? • Are wafer sorters being used?	Yes Yes
6	RFP Page No– 135 Section– Appendix 16 Sub- section. III	Data Capturing & Interface	• The 8 process tools and 8 metrology tools support secs/gem protocol for Factory Automation. Can you confirm? • If any of these tools do not support Factory Automation, will they be excluded from automation?	Data Capturing and interface to be responsibility of bidder as per RFP. Further details can be discussed with qualified bidders after signing NDA.
7	RFP Page No– 135 Section– Appendix 16 Sub- section. III	Data Capturing & Interface	• Does SCL use an existing Host Application? • How is equipment data currently fed into the CIM modules?	Bidder to implement a fresh setup at SCL as per RFP
8	RFP Page No– 135 Section– Appendix 16 Sub- section. III	Data Capturing & Interface	• Is there an existing Recipe Management Server? • Does MES need to integrate with RMS?	Bidder to implement a fresh setup at SCL as per RFP
9	RFP Page No– 135 Section– Appendix	Data Capturing & Interface	• We understand that MES needs to interact with the Yield	Defect Inspection, Optical review and

	16 Sub- section. III		Management System. However, we did not see inspection tools listed in the automation tools—only process and metrology tools were mentioned. Is there a reason for this?	SEM review Tools are linked with Yield Management System (YMS). MES to be linked with YMS.
10	RFP Page No– 135 Section– Appendix 16 Sub- section. III & RFP Page No– 123 Section– Appendix 16 Sub-section. 1	Data Capturing & Interface & MES has to support end-to-end (Design, Fab, Electrical Testing, SORT, RNQA and Package & Assembly) process flow, tracking, and tracing.	• Why are only CMP, Litho, Etching, and Metrology tools included in automation? Are other process equipment, especially backend tools, excluded for a specific reason?	As per RFP
11	RFP Page No– 35 Section– Table 8: Technology Cost Component Payment Milestones Sub- section. Bid Package 3	Complete installation and successful testing of the software and all its modules/functionalities	• Is there a TestBed setup for MES testing without affecting production? • What environments does MES need to support (e.g., DEV, UAT/Training, Production)?	Acceptance as per RFP. All environments as per RFP
12	RFP Page No– 124 Section–Appendix 16 1 Sub- section. A FAB Modelling	Step Type definition: Process, Measurement, YE Step, Dummy, Inspection	• Are we missing Defect Review? • What are YE Step and Dummy?	These are short names for different process / metrology / Yield steps
13	RFP Page No– 125 Section–Appendix 16 1 Sub- section. A FAB Modelling	Support E10 main state defined by SEMI standard and provide sub-state	• Do all tools to be automated need to support SECS/GEM interfaces as per SEMI standards (E4, E5, E10, E30, E37, E40, E90, E94, E87, E116)?	As per RFP. Further details can be discussed with qualified bidders after signing NDA.
14	RFP Page No– 29 Section– 1.5.3 Sub-section. 1 e	Integrating MES with various other software like Yield Management Software, Facility Monitoring System	• Does SCL have standalone YMS, FCMS, and ABPS applications, or should these be included in the new MES system?	Yes, available
15	NA	Equipment automation-related questions	What automation functionalities need to be implemented? • Recipe Upload, Download, Golden Recipes • Remote commands: PPSELECT, START, STOP, ABORT, PAUSE, RESUME, LOAD, UNLOAD, MAP • Data collection	As per Package-3 (MES) specifications and acceptance criteria
16	NA	Equipment automation-related questions	What types of data need to be collected through Equipment Automation? • Tool Collection Events, Alarms, Status Variables, Equipment Constants • Process Parametric Data, Metrology measurement data, Inspection • Consumables, Leading Indicators data collection for Preventive Maintenance scheduling	As per Package-3 (MES) specifications and acceptance criteria
17	NA	Equipment automation-related questions	What CIM modules and systems need to integrate with the Automation host? • MES - WIP validation, Equipment E10 Status check, wafer track-in/track-out transactions • SPC - Statistical Process Control for Metrology data	As per Package-3 (MES) specifications and acceptance criteria

			• EDC - Engineering Data Collection for data analysis • FDC - Fault Detection Classification, Monitoring system for real-time process parametric data monitoring • APC - Advanced Process Control (Run2Run control with FeedForward and FeedBackward using metrology measurement data) • Operator certification systems • Wafer Sorter - Wafer ID reader for slot map integration with cassettes • Tool Maintenance modules	
18	NA	Equipment automation-related questions	What are the GUI requirements for the Host Application? • Tracking automation data at cassette level or tracking at slot level with wafer ID integration • How do you currently run Production, Process Quals, Engineering R&D, Calibration, Lookahead, Etch Quals	As per Package-3 (MES) specifications and acceptance criteria. Slot level with Wafer ID Tracking
19	NA	Equipment automation-related questions	SECS/GEM HSMS is the standard. Can you confirm this? • Are there any tools that need to be interfaced using the RS-232 serial interface? • Any requirements to use other standards like OPC, PLC, SCADA, HMI	As per Package-3 (MES) specifications and acceptance criteria Some tools may require interfacing with RS-232, OPC, PLC, SCADA, HMI etc..
20	NA	General question	• Does MES need to support both 6-inch and 8-inch wafer lines?	N.A., 6 Inch fab line is not included
21	NA	General question	• Which ERP system is currently in use?	No ERP at SCL

Vendor 2

S.No.	RFP Page – Section	Content of RFP	Points of clarification	SCL Response
1	General		If the vendors for 3 different packages are different who will be responsible for program management and coordination of technical dependencies between the vendors?	All 3 bid packages are independent. Overall Project Management by SCL
2	Page 30	The implementation of MES software and equipment automation shall commence as per the Authority's plan based on status of work completion in Bid Packages 1 and 2 and/or other internal decisions made regarding MES capability	Selection of machines would determine best fit MES solution. It is mentioned on page 30 that Package 3 would start based on completion status of Packages 1 and 2. Can you confirm if its possible to start Package 3 along with 1 & 2 to select best MES solution?	Start of bid package 3 can start along with Bid package 1 in phased manner as decided by Authority's plan. Please see page 30
3	General		Can vendor bidding for package 3 partner/subcontract to MES solution providers?	As per RFP terms.
4	General		Please allow extension of technical proposal submission by 6 weeks from existing timeline.	Please submit the bid within time line

Vendor 3

S.No.	RFP Page No, Section, Sub section	Content of the RFP	Points of Clarification	SCL Response
1	Page#124, Section I	MES has to support end to end (Design, Fab, Electrical Testing, SORT, RNQA and Package & Assembly) process flow, tracking and tracing	What is RNQA? Does the MES need to include features for design, RNQA, Packaging & Assembly etc?	RNQA means Reliability and Quality Assurance. Yes
2	Page#134, Section I.G	Special Work Requests	Kindly explain this in detail	Details given in Section E of package 3
3	Page#134, Section I.G	Set lot actions (rework, scrap, high risk etc.)	Kindly explain this in detail	Details given in Section E of package 3
4	Page#134, Section I.G	Set corrective actions, owner, status, defects	Kindly explain this in detail	It is related to provision for predefining actions in case of deviation in lot processing
5	Page#135, Section I.I	Integration with CIM module	Kindly name the OEM for each of the systems	Yield Management System: Synopsys, Inventory management System: Inhouse developed software, ABPS: TSI, FCMS: Rockwell Automation Details are mentioned in page no 135
6	Page#135, Section II - 1 & 2	Hardware / Software Required for running MES	Considering hardware and third party softwares will have their own installation and recurring maintenance requirements, is it expected of the MES/CIM solution scope? Will recommendations of hardware & third party softwares be acceptable instead?	It is a bidders scope
7	Page#136, Section III.2	Contractor(s) to provide all of the required Hardware & Software for capturing/parsing equipment & process data from existing metrology and process equipment mentioned below	This is subject to the equipments are 'SECS-GEM' enabled & ready	Some tools may require interfacing with RS-232, OPC, PLC, SCADA, HMI etc..
8	Page#136, Section III.1	Automatic Interface with Yield Management system(YMS), Inventory Management System, Facility Control Management System (FCMS), Air Borne Particulate	Will all required details of these softwares be shared?	As mentioned above in row 5.
9	Page#139, Section I.G	Ability to make dynamic / on the fly changes and tracking these. Real time Non-Conformance & DMR initialization, execution, tracking and reporting.	Kindly explain Discrepancy Material Report (DMR) in detail	Recording the events during lot processing wherein there is deviation from standard flow and specifications.

Vendor 3

10	Page#50, Section 1.24F	Total Cost in INR Core	Is INR the only currency to be quoted in? How about quotes from foreign vendors?	Yes, as per RFP

Vendor-4

Pre-Bid Query Format

CLARIFICATIONS REQUESTED				
SNo	RFP Page No, Section, Sub-section	Content of the RFP	Query	SCL Reply
1	Page 8 , Section 1.1	The facility meets international standards in terms of design, process equipment. Quality and reliability assurance adhere to global performance specifications	a) Which standard of Cleanroom is certified at SCL? B) When(Date) was the cleanroom last certified as per standard? C) What is the total area of cleanroom in sqft ? D) On which standards , the products from SCL fab have been qualified ?	a. CR is certified as per US federal standard 209E. b. will be shared with qualified bidders after signing the NDA c. 25000 sq ft including gray area d. Mil std JP-001A Please go through SCL web (www.scl.gov.in) site for more details
2	Page 62 to 106, Appendix 5 to 9	Utility Infrastructure	Please provide the codes of international standards for each of utilities as mentioned in this point . Also provide list of certification as on today which are adhered by, and also certified to your company for these utilities infra.	Installed utility commensurate with 180nm Node requirements are validated as per Semi Standard.
3	Page-9, Section 1.2	Augment the capacity of the line to at least 1500 WSPM, build redundancy and improve operational performance	1. What is the current capacity of your facility (in WSPM) ? How is it calculated? (Please mention product, tech node, metal levels, die-size in mm2 and yield obtained at current WSPM) 2. How much is the difference between current estimated WSPM capacity and real WSPM capacity achieved at the fab ? What is the maximum WSPM that has been achieved ever at your company and what is the past average yield(%) at maximum WSPM ?	Current installed capacity is around 500-600 WSPM. Capacity calculation can be done based on standard method based on 4Metal digital logic process at 180nm Required information is not limiting the RFP scope for bidding. Further information can be shared after NDA with Qualified bidders.

Vendor-4

4	Page-14 Section I.1	I.1.e Re-check structural strength and vibration specs of the existing fab building on waffle slab & non-waffle slab areas and study impact of additional loads and pop-outs on building/slabs due to proposed equipment addition	a) When was the civil-structure of SCL Cleanroom constructed? How many years of projected lifetime (for structual, mechanical and vibrational integrity) was it designed for? b) Shall the post-SITC acceptance criterion also include meeting structural strength and vibrational specs for whole cleanroom (all old as well as modified/new tools of the fab) , or only at modified/new tools ? Will SCL be paying civil costs over-and-above for ensuring structural and vibrational integrity testing for performance of old/exisiting tools ? c) In case of total loss of structure specifications while the project is underway due to old-age of the construction and subsequent past modifications , the libability of loss shall be of SCL or Vendor? What is the limit on damages to be paid by Vendor? We suggest liability should be of SCL only , as per fairness requirments.	a. Civil structure built in 1992-93 as per UBC/NBC. SCL has validated the structure. However RFP scope is limited only for internal changes and not in the main building structural changes. b. Vendor shall verify the existing structural strength vibration specification to ensure suitability of housing proposed additional equipment in the cleanrooms on the existing waffle / non waffle slab area. The entire activity shall under scope of vendor. c. Vendor shall execute entire work within the permissible / design limits of the structure. Any test required for assessing the structural strength prior to tool move in, etc. shall be part of vendor scope.

Vendor-4

5	Page-14 Section I.1	I.1.f Validate proposed equipment list, staging plan, fab layout, cleanroom and utilities modifications/augmentations, etc. in a comprehensive manner to evaluate whether 8-inch line capacity can reach at least 1500 WSPM	a) What shall be the acceptance criterion to calculate 1500WSPM after project? b) What shall be yield % to be demonsrated as per the acceptance criterion ? c) On what die-size will the yield% has to be achieved? Also specify number of metal levels and any standard product specifications. d) What maximum processing time is allowed per wafer? We suggest a single die with yield > 75% , for 3 consecutive months at 1500wafers output after the 1st run. (Only the cost of wafers and production for demonstration purposes for initial 1-6 months shall be in the scope of vendor) e) Does SCL require AMHS (Automated Material Handling System) and OHT (Overhead Hoist Transport) alike solutions for pod-handling, transportation and movement between equipments ? Is this in scope of this project? It is also suggested to your high authority that 1500WSPM capacity requires a significant floor area for keeping and moving almost 500-600 SMIF wafer-pods required for production & monitoring, if they are not placed overhead. We assume that the floor area is a constraint as your cleanroom and was never designed for potential 1500WSPM capacity.	a. Calculation to be done for 4ML digital process at 180nm and equipment throughput b. Will be mutually discussed and finalized with qualified bidders c. Same as b. d. Process time as per BKM or tool throughput e.AMHS & OHT are not part of RFP scope. However vendor shall clearly identify the constraints perceived / assumed by them in their technical submission and shall explicitly mentioned the plan to mitigate the same.

Vendor-4

6	Page-15, Section 1.5.1	II. Detailed Engineering and Execution - scope of work	The enhanced capacity of 1500WSPM will lead to extra requirement of resources from existing public civil infrastructure of the locality where SCL is situated. New plants (acidic slurry treatment, water treatment and recycling, solid waste management, sewerage system may also be required to be constructed on-site) Also, the regulations often pose risk to viability of such expansion projects. Whose scope will be the responsibility (including payments) of constructing new plants and obtaining additional environmental approvals, increased effluent discharge approvals for toxic and non-toxic chemicals, safety-codes and approvals, proximity to residential & civil area safety requirements, enhanced water,sewerage & electricity requirements, pollution compliance, dense-population risks with respect to storage of chemicals and gases & liabilities etc ? We suggest SCL should bear such responsibility and costs (but not limited to mentioned in here) as well as all civil risk liabilities , as it requires interface with multiple government agencies.	Complete scope is define in RFP. Further information can be shared after NDA with Qualified bidders. Regarding the environmental approvals from state pollution control board and other statutory approvals, SCL will bear the application fee. The selected vendor shall however provide the relevant information and liaison for renewal the consents to operate/ establish.
7	Page 17, Section 1.5.1	III. The overall scope for equipment upgrades, replacement and addition shall be completed in 3 logical stages to cause minimal disruption of fab operations and introduce step changes in cleanroom and utilities modifications	There is high probability of significant downtime of the production activities during the execution of entire Package-1 and this should be acknowledged by SCL at pre-bid itself. Cleanroom disturbance is unavoidable even when minor activities related to upgradation/modification in tools, especially utilities are carried out.	These stages as defined in RFP are defined to minimize disruption. Contractor should plan the movement in accordance with SCL to minimize the down time.
8	Page 19, A.General	4) Any OEM-refurbished tools must have OEM support of at least 10 years from the time of tool acceptance, and a minimum residual life of 80% at the time of shipment, as per applicable government norms	A) What shall be the criterion for New/OEM-Refurbished/Non-OEM refurbished ? B) How shall the Least Cost evaluation be carried out in case Vendor-1 is quoting for new tools, Vendor-2 is quoting for Non-OEM Refurbished? C) If the seller or vendor is not an authorized distributor/reseller of the OEM of the tool, can he still bid for such tools?	a. As per RFP Vendor shall supply only New or OEM refurbished tools (with 80% residual life). Keep in mind that same are required to be supported by OEM for 10years b. As per RFP. c. As per RFP

Vendor-4

9	Page 47, Section 1.23	The Bidder(s) should have successfully completed at least one similar contract (s) / project (s) in the 15 years preceding the Bid Due Date	The time-limitation for execution-capacity is listed as 15 years here. However, on Page 161, in Annexure-H, the Suspension/ Blacklisting/ Debarment requirements are for previous 5 years and not 15 years. This should be clarified. We suggest same duration-terms (all should be either 5 years or 15 years) for equal opportunity and fairness to all bidders.	AS per RFP terms
10	Page 48, Section 1.23	2) Financial Capacity: The Bidder(s) should have an average annual turnover of at least INR 1000 Crore during the last three audited financial years.	A) Can this be revised to last-two audited years? B) Please clarify if every partner of the consortium has to be in existence for last three financial years?	a. As per RFP b. As per RFP

Vendor-4

11	Page 48, Section 1.23	Bid Package 3 : Execution Capacity: The Bidder(s) should have successfully completed at least one similar contract (s) / project (s) in the 10 years preceding the Bid Due Date with experience in supply, installation, testing and commissioning of MES with all related software and hardware	We suggest same duration-terms (either 5 or 10 or 15 years) in all places whether execution capability/financial capability/ debarment/ suspension/ blacklisting for equal opportunity and fairness.	AS per RFP terms
12	Page 49, Section 1.24	It is further clarified that the bid quoted by the Bidder(s) shall be inclusive of all the expenses for any activities proposed to be undertaken for the fulfilment of the scope of work covered in the RFP documents (including pre-bid queries responses, any addenda, amended RFP, etc.) and payment for any additional financial obligations/ costs for any third party, etc. shall not be made unless thesame have been specifically approved in writing.	The enhanced capacity of 1500WSPM will lead to extra requirement of resources from existing public civil infrastructure of the locality where SCL is situated. New plants (acidic slurry treatment, water treatment and recycling, solid & chemical waste management, sewerage system may also be required to be constructed on-site) Also, the regulations often pose risk to viability of such expansion projects. Whose scope will be the responsibility (including payments) of constructing new plants and obtaining additional environmental approvals, increased effluent discharge approvals for toxic and non-toxic chemicals, safety-codes and approvals, proximity to residential & civil area safety requirements, enhanced water,sewerage & electricity requirements, pollution compliance, dense- population risks with respect to storage of chemicals and gases & liabilities etc ? We suggest SCL should bear such responsibility and costs (but not limited to mentioned in here) as well as all civil risk liabilities , as it requires interface with multiple government agencies.	Complete scope is defined in the RFP Same reply as above point no 6

Vendor-4

13	Page,50 1.25	Selection of Bidder : The selection of bidder shall be based on Least Cost Selection (LCS) method.	A) How shall the Least Cost evaluation be carried out in case Vendor-1 is quoting for new tools, Vendor-2 is quoting for Non-OEM Refurbished? B) If the seller or vendor is not an authorized distributor/reseller of the OEM of the tool, can he still bid for such tools? C) What shall be the criterion for New/OEM-Refurbished/Non-OEM refurbished ?	Same reply as above point no 8
14	Page 54 to 60	Appendix 1 : Proposed Equipment Upgrades Appendix 2 : Proposed Equipment Replacement Appendix 3: Proposed Equipment Addition	A) Please specify which SNo (tool) has to be new, which SNo(tool) can be OEM-refurbished and which can be non-OEM refurbished. B) If refurbishment is done by seller and authorization or reselling-privilege is not provided by OEM to seller, can the bidder still supply such tool in the package-1?	As per RFP terms As per RFP terms
15	Page 67	Performance Testing Of Clean Room	A) Shall the post-SITC acceptance criterion also	B)

Vendor-4

		In the event of non-conformance to the defined Clean Room parameters, the Contractor shall take corrective action at his cost. The Clean Room certification shall be redone at Contractor's cost to establish conformance to specifications	include meeting structural strength and vibrational specs for whole cleanroom (all old as well as modified/new tools of the fab) , or only at modified/new tools ? B) Will SCL be paying civil costs over-and-above for ensuring structural and vibrational integrity testing for performance of old/exisiting tools ? C) In case of total loss of structure specifications while the project is underway due to old-age of the construction and subsequent past modifications , the libability of loss shall be of SCL or Vendor? What is the limit on damages to be paid by Vendor? We suggest liability should be of SCL only , as per fairness requirements.	a. As per RFP terms b. Shall be discussed after NDA with Qualified bidders. c. Shall be discussed after NDA with Qualified bidders.
16	Page-100	Appendix 6B : Constraints of Existing Infrastructure	Please provide undertaking that no-bidder shall be provided later concessions in these constraints as these constraints in the RFP significantly strain the financial considerations of bidder as stricter technical requirements to be met and also impact the cost to the bidder. If there is any relaxation given by your company in these constraints at any stage , fresh-bidding should be invited.	Vendor must present the plan to mitigate/ overcome the constraints mentioned in the RFP as part of its technical submission detailed engineering
17	Pg161, Annexure-H		The time-limitation for blacklisting/debarmet/suspension clause is 5 years. However, on Page 47, in Section 1.23, the Execution Capacity requirements are relaxed for works done upto 15 years and not 5 years. This should be clarified. We suggest same terms for equal opportunity and fairness.	AS per RFP

Vendor-4

18	Page-115 to 122	Appendix 13 : RF-CMOS : SOW Appendix 14 : BCD (HV-LDMOS) : SOW Appendix 15: CIS Technology : SOW	The scope of work is not fully transparent and can be advatageous to specific vendors as there is no minimum fixed specifications provided for test-chips and demostrator product. We suggest to pre-define the product ASICs (with data sheets examples from major ASIC suppliers such as TI, Analog Devices, Samsung, Qualcomm etc) which are to be demostrated for acceptance of these process -techonolgy upgrades in your existing 180nm CMOS process. Arbitrary and later selection of products shall be unfair, as the cost to the bidder is dependent on complexity of the ASIC/products to be demonstrated for technology acceptance with required output-specifications and yield. Hence, for fair bidding process, please fix the products/ASICs which are commercially available for RFCMOS, HV-LDMOS, CIS flavors in 180nm nodes from existing reputed ASIC companies.	scope of work is clearly defined in RFP

	Bidder's Request for Clarification			
S.NO	**RFP Page**	**Content of the RFP**	**Points of Clarification**	**Reply**
1	1.5 Scope of RFP	Bid Package 1:1) Gap Analysis & Detailed Study to determine precise requirements for cleanroom and utilities sources and distribution modifications/augmentations and validate proposed plan for augmentation of 8-inch line to at least 1500 WSPM	How can this gap analysis be done without knowing actual mix of the technologies planned and number of wafers scheduled for each technology.	1. This gap analyses for clean room and utilities and not for technology gap analyses 2. Technology IPs sought are perpetual and are not limited to the number of wafers per technology IP
2		Detailed engineering and execution of modifications / augmentations of existing cleanrooms, utilities plants / sources and utilities distribution for commissioning supplied equipment (35 nos.),upgraded equipment (22 nos.) and relocated existing equipment (as required)	How can this job can be done without knowing actual mix of the technologies planned and number of wafers scheduled for each technology.	Same as above
3	Bid Package 2:	Supply and Qualification of technology IPs (03 nos.) and design enablement on the existing SCL process for 8-inch line as part of technology transfer for the below technologies	Do you really need IPs for a such old technologies? All the IPS have expired for this kind of technologies 15 years back.	Requirement as per RFP
		a) Item 1: RF-CMOS	Does SCL has any capability for CMP and Tungsten BEOL for this technology?	Yes, Refer RFP and SCL website
		b) Item 2: BCD (HV LDMOS)	Does SCL has any capability for SBL and EPI growth for this technology?	No, Refer Appendix 14
		c) Item 3: CMOS Image Sensor (CIS)		
	1.5 Scope of RFP	BID 1 ,BID2,BID3	Can you change the sequence of the bid to be more practical? Unless you know what each technology needs in full detail and the mix of the wafers per month, you cannot come up with the correct tools. Also the gap analysis can be done only after assessing the capability in SCL for each technology.	RFP terms are final

Vendor 6

Clarifications Requested				
S.No.	RFP Page No– Section–Sub- section	Content of the RFP	Points of Clarification	SCL Reply
1	General	Bid Commercial terms	Please keep all commercial terms be addressed within the financial bid After SCL will qualify the Bidder, the Bidder will close commercial terms with his sources/suppliers taking into account SCL's requirements.	As per RFP
2	Page 15 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 II. Detailed Engineering and Execution of Cleanroom & Utilities Modifications Augmentations & Tools Hook-up	All related scope under this section	The Bidder is required to provide a quotation for this section before the Gap Analysis & Detailed Study (as detailed in Section 1.5.1) . What assumptions and data should the Bidder use to create the quotation? The assumptions have a major impact on pricing. How will SCL conduct the financial evaluation, considering that the initial quotes from different bidders are based on their assumptions of the quoted scope.	Please refer to the requisite details provided in the RFP and Appendices.
3	Page 17 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 III. Supply, Installation, Testing and Commissioning of Equipment and Equipment Upgrades	The Contractor(s) shall Supply, Install, Test and Commission equipment (35 nos.)	When will SCL provide the equipment configurations? The configuration directly affects pricing (number of chambers, etc.)	Refer Page 21, A. General, Sub-section 17; the configuration shall be provided by the Contractor(s). Please note that Equipment Make and Model is specified in Apendix-2 & 3. The configuration shall be such as to meet throughput requirement of min.1500WSPM as per RFP.
4	Pages 19-20 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 A. General Sub-section 8)	8) Relocation of these, and any other equipment deemed necessary for relocation as determined in the Detailed Engineering Study (see Cleanroom & Utilities Modifications / Augmentations and Tools Hook-Up), shall be in the scope of the Contractor(s	Apart from the 3 tools defined by SCL, a quote for relocating the existing tools can be provided after a Gap Analysis and Detailed Study, when the relocation requirements are defined. Please confirm.	Refer Page 12 for scope of the Bid Package-1, which includes the requirement of equipment relocation. However, the quote for the same shall be provided as per Page-11/1.4/8.
5	Pages 19-20 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 A. General Sub-section 12)	12) For the tools being supplied (replacement and/or addition) which are of a different make/model than those available at SCL, be they process tools (eg. Dielectric etcher, LAM DVI solvent strip, DNS bath for PDC, etc) or metrology tools, the Contractor(s) shall also provide process recipes for such tools, with recipe and success criteria to be defined by SCL.	Bidder process recopies are Bidder IPs and can be provide only after agreement sign, then the Bidder will suggest his recommendations for the success criteria, based on its experience. The final success criteria should be mutually defined by SCL and the Contractor - Please confirm. For a successful implementation, the Bidder will include in its scope process tuning support and demonstrate success of unit steps and module integration after equipment installation/upgrade. Please confirm	Recipes have to be provided by the contractor. Success criteria of the recipe shall be finalized with the contractor. The tool shall be process ready for employing in the production in the project duration.

Vendor 6

6	Pages 19-20 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 A. General Sub-section 13)	13) For the tools being supplied (replacement and/or addition) which are having the same make and model as those currently installed at SCL, the tool configuration should be compatible to the recipes being used in the corresponding tools at SCL in order to meet the process	Even for tools of the same model and make with similar configurations, modifications/adjustment of SCL process might be required as the tools are not necessarily identical. For a successful implementation, the Bidder will include in its scope process recipe modifications/adjustment, unit steps and module integration after equipment installation/upgrade. Please confirm	For the tools being supplied (replacement and/or addition), contractor shall provide the recipe compatible with those currently installed at SCL. The tool shall be process ready for employing in the production in the project duration.
7	Page 20 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 A. General, Sub-section 9)	9) Supply and install chambers, modules, sub-modules, units, parts, power modules, software upgrade, special tools, licenses etc. as may be required to upgrade the existing equipment at its current location in the cleanrooms as per upgrade requirements enlisted in Appendix 1 : Proposed Equipment Upgrades.	Please elaborate on SCL's requirements for the supply and installation of software upgrades and licenses etc.	Refer Apendix-1 of the RFP.
8	Page 23 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 Section D - Warranty, Supplied Equipment Sub-sections 1)-4)	Warranty terms for supplied equipment	What is the difference, in service level, between the warranty period and a tool under a CAMC ?	Refer Page 23 & 24 of the RFP for Warranty and CAMC Terms and Conditions.
9	Page 23 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 Section D - Warranty, Supplied Equipment Sub-sections 1)-4)	Warranty terms for supplied equipment	Instead of a defined 24-month warranty, can the equipment be covered under CAMC after acceptance?	Refer Page 24, RFP clearly mentions as “The warranty terms of the supplied equipment and upgrades may be appropriately adjusted in the CAMC”.
10	Page 24 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 Section V. Comprehensive Annual Maintenance Contract (CAMC) Subsection 2)	2) Commit to a minimum line uptime factoring the CAMC scope and redundancy being built in the line via the installation of additional equipment	The Bidder recommends defining the uptime methodology during the financial phase and finalizing it as part of the agreement discussions with the Bidder. The uptime methodology should be based on semi-industry standards. <u>Notes:</u> 1. Per Semi industry standard (E10-0221 and others) uptime is calculated per equipment/equipment-type (group of equipment in case of more than one of a kind tool). 2. To establish a balanced and reciprocal agreement, a bonus for the Contractor should also be considered for uptime exceeding a specified percentage.	As per RFP
11	Page 24 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 Section V. Comprehensive Annual	3) Maintain adequate team of service / equipment engineers at SCL site to maintain the equipment with provision for maintenance on 2-shift and weekends for priority lots /	In order to provide adequate support the Contactor will also have on-site process engineers (equipment and line sustaining involves process investigation etc.) - please confirm. Please provide details on:	Vendor to decide minimum required manpower to fulfill RFP requirement. Shift Hours: 6AM to 10:30PM to cover two shifts All priority/time-lots to be attended on

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	Maintenance Contract (CAMC) Subsection 3)	time-limit lots.	1. Required shift hours 2. Expected level of support for "priority lots / time-limit lots" during weekends.	weekends.
12	Page 24 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 Section V. Comprehensive Annual Maintenance Contract (CAMC) Subsection 4)	4) Secure back-to-back arrangement or MoU with prominent equipment OEMs whose tools are installed in the fab (AMAT, KLA, TEL, etc.) and provide external OEM / OEM trained experts for any critical maintenance.	Please provide a detailed information regarding SCL's expectations for this section	Refer Page-24, the purpose is to maintain minimum equipment uptime of 80% calculated on monthly basis.
13	Page 24 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 Section V. Comprehensive Annual Maintenance Contract (CAMC) Subsections 6) and 7)	6) Supply of all spares including consumable and non- consumable spares, back up parts for all equipment including their accessories and support equipment (in fab and sub-fab) shall be on open-book or pass-through cost basis 7) Supply of some high-consumption raw materials such as chemicals, gases, wafers, etc. on openbook or pass- through cost basis	When can the bidder obtain SCL's historical consumption data and consumption model for spares, raw materials, and other items within the Bidder's scope?	Refer Page-11, the data will be made available to the Qualified Bidder through secured access to Data Room after NDA.
14	Page 24 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 Section V. Comprehensive Annual Maintenance Contract (CAMC)	6) Supply of all spares including consumable and non- consumable spares, back up parts for all equipment including their accessories and support equipment (in fab and sub-fab) shall be on open-book or pass-through cost basis.	Open-book or pass-through cost basis –Please elaborate this mechanism.	All spares including consumables, non-consumables, backup parts will be supplied as per requirement on actual cost (original suppliers' invoice to be shared) plus mutually agreed margin at the time of contract signing.
15	Page 24 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 Section V. Comprehensive Annual Maintenance Contract (CAMC) Subsection 10)	10) Flying wafer support	Please provide a detailed description of SCL's expectations regarding Flying Wafers (there is not a clear definition of Flying Wafers in the RFP). Does SCL expect the Bidder to include flying wafer support for all scopes within Package 1, beyond the CAMC scope (for example flying wafers are required for new/upgrade equipment acceptance etc.). Please confirm if this should be included in the Bidder scope.	Scope of the flying wafer includes wafers required for tool troubleshooting.
16	Page 24 Section 1.5 Scope of RFP; 1.5.1 Bid Package 1 V. Comprehensive Annual Maintenance Contract (CAMC)	The Comprehensive AMC for 5 years shall cover the existing 8" wafer fab equipment (as per Appendix 10 : Existing Equipment Included in CAMC) as well as the supplied equipment (total 35 nos. – 12 replacement and 23 additional) and upgrades (22 nos.) after warranty period, as detailed in this RFP. The CAMC scope for the Contractor(s) shall include:	Please elaborate how does SCL expect Bidder to quote for CAMC for the new equipment/upgrade? The cost depends on when each tool enters the CAMC (after the warranty ends).	After the acceptance subject to "The warranty terms of the supplied equipment and upgrades may be appropriately adjusted in the CAMC".
17	Page 24 Section 1.5 Scope of RFP; 1.5.1	5) Maintain local inventory of spares and consumable spares including	The Bidder will maintain an adequate local inventory, supplemented by the	Yes, on mutually agreed chargeable basis

	Bid Package 1 Section V. Comprehensive Annual Maintenance Contract (CAMC) Sub-section 5)	pumps, chillers, heat exchangers, RF generators, ozonators, microwave generators, CDS, LDS, etc.	Bidder global inventory to meet uptime requirements. Please confirm that SCL will provide the Contactor with a storage areas for all spares, materials etc.	
18	Page 26 onward Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 A. General	Bid Package 2 General	From the Bidder experience flying wafers support/service is crucial for successful technology transfer and for meeting the success criteria and timeline. Please advise whether this should be included in the offered scope by the Bidder for each technology in Package 2.	Bidder may add flying wafers if required to fulfill the RFP requirement.
19	Page 26 onward Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Subsection A. General Sub-section 3)	3) Preferably all PDKs should have coverage for industry- leading EDA vendors (Synopsys, Cadence, Siemens and Keysight) catering to their respective strengths	Please confirm the following design tools.	Available
20	Page 27 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 B. Scope of Technology Transfers. Sub Section 1) a) (RF-CMOS)	a) Provide test chip for process and device verification	What is the reference data required for the test chip, such as proven SPC chart in HVM fab?	Purpose of the testchip is defined in Appendix-13, 14 & 15 for establishing the technology as per the RFP scope.
21	Page 27 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section B. Scope of Technology Transfers. Sub Section 1) e)	e) High frequency I/O pad libraries with ESD protection (HBM ≥ 2kV).	SCL exiting I/O pad library is suitable also for this technology. No need High frequency I/O pad library.	As per RFP I/O pads as provided in the I/O library shall meet the requirements of Page 27, B.1.f.
22	Page 27 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section B. Scope of Technology Transfers. Sub Section 2)	Support for VDS up to ~40V or higher and VGS of 3.3V and/or 5V which includes:	The Bidder recommends SCL to focus of 5V which is world wide mainstream. Please confirm.	As per RFP please refer Corrigendum
23	Page 27 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section B. Scope of Technology Transfers. Sub Section 2) a) (BCD)	a) Provide test chips for process and device verification including reliability qualification & verification	What is the reference data required for the test chip (such as proven SPC chart in HVM fab)?	Purpose of the testchip is defined in Appendix-13, 14 & 15 for establishing the technology as per the RFP scope.
24	Page 27 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section B. Scope of Technology Transfers. Sub Section 1).b)	b) Industry standard scalable RF-models for all the active (1.8/3.3V MOSFETs)	What are the success criteria, in terms of lots or wafers, to demonstrate that the IP is production-proven?	Refer Page-27 at B.1.f (benchmark circuit performance) and Appendix 13 of the RFP for overall SOW pertaining to work plan.
25	Page 27 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2	b) As a confidence building measure Contractor(s) to provide device characterization database (DC-AC	To establish confidence, what is the minimum number of lots/wafers required to demonstrate that the IP is production-proven?	Contractor to provide relevant data from POR to which they have or have established access.

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	Section B. Scope of Technology Transfers. Sub Section 2).b)	curves along with critical device parameters such as Ron, SOA, high-voltage MOSFETs reliability trends).		
26	Page 27 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section B. Scope of Technology Transfers. Sub Section 2).g)	g) High voltage I/O pad libraries with ESD protection (HBM ≥ 2kV)	SCL exiting I/O pad library is suitable also for this technology. No need High voltage I/O pad library	As per RFP I/O pads as provided in the I/O library shall meet the requirements of Page 27-28, B.2.a and B.2.g.
27	Page 28 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section B. Scope of Technology Transfers. Sub Section 3) a)	a) The CMOS image sensor is to be integrated in SCL's existing 180nm CMOS process through a systematic work plan which includes both process and design enablement along with pixel and any other related IPs in SCL flow and support for all the characterization equirements.	Please confirm the following: "The CMOS image sensor is to be integrated in SCL's existing 180nm CMOS process through a systematic work plan which includes both process and design enablement along with pixel related IPs in SCL flow and support for the characterization requirements."	No clarification sought here
28	Page 28 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section B. Scope of Technology Transfers. Sub Section 3) b)	b) Additional support for 1D and 2D stitching for large area arrays should be provided.	The Bidder recommends not to include stitching is in this RFP scope. Stitching can be developed after standard CIS implementation completed successfully. In addition, for a wide field capability it is recommended to procure a specific photo tools which can support stitching and the required stitching supporting automation.	As per RFP
29	Page 28 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section B. Scope of Technology Transfers. Sub Section 3) c) AND Page 121 Appendix 15 : Detailed Scope of Work for CIS Technology in SCL 180nm CMOS Process Sub-section 1) a)	Page 28: Table 5: CMOS Image Sensor Pixel Specifications Parameter : Pixel pitch (um); Value: 5-40 Page 121: a) Support pixel sizes ranging from 5 to 40 micron in 3.3V	Please confirm that the following specific pixels size is acceptable -5um, 10um and 32um.	No, requirement defined on Page 121 Appendix 15, Point#3. Please refer Corrigendum
30	Page 28 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section B. Scope of Technology Transfers. Sub Section 3) c)	Table 5: CMOS Image Sensor Pixel Specifications Parameter: Photodiode type PPD (Pinned Photo Diode); Value: Pinned Photodiode (PPD) and Deep Depletion Extension (DDE)	Is DDE is mandatory ? If yes, need SCL clear definitions for evaluation.	DDE is not compulsory subject to pixel meeting the performance requirement as stipulated in RFP for all three pixel sizes 5, 10 and 40um.
31	Page 29 Section 1.5 Scope of RFP, Section 1.5.2 Bid Package 2 Section E - Intellectual Property Rights (IPR)	Intellectual Property Rights (IPR) - SCL shall have full control over the IP and deliverables, including all licenses, enabling SCL to use the IP for internal usage as well as for external customers without any restriction and cost implications including but not limited to royalty and	SCL will have a non transferable, royalty free license IP and deliverables enabling SCL to use the IP for internal usage as well as for manufacturing products for its external customers. Technology transfer requires conducting an export assessment to determine if an export license is required.	As per RFP

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		usage fees.		
32	Page 31 Section 1.6 Delivery and Payment Terms, Section 1.6.1-Delivery Terms Sub-section 3	3) All stores and materials such as upgrades, equipment, utilities, software, tools and tackles etc. should be supplied by the Contractor(s) on DAP, SCL SAS Nagar (F.O.R., SCL SAS Nagar) basis	In case of DAP; can SCL reclaim the tax paid by the Bidder as per SCL CDEC?	No
33	Page 31 Section 1.6 Delivery and Payment Terms, Section 1.6.1-Delivery Terms Sub-section 3	3) All stores and materials such as upgrades, equipment, utilities, software, tools and tackles etc. should be supplied by the Contractor(s) on DAP, SCL SAS Nagar (F.O.R., SCL SAS Nagar) basis	Can the Bidder quote different Incoterms? This could benefit SCL in terms of taxation and pricing,	As per RFP
34	Page 31 Section 1.6.1 - Delivery Terms	Delivery Terms	Delivery terms should be discussed during the financial bid stage, mutually agreed upon at contract signing, and adjusted following the Analysis & Detailed Study. The final delivery schedule, taking into account SCL's requested timeline, can be finalized after the Analysis & Detailed Study, which will determine the final scope.	As per RFP
35	Page 31 Section 1.6 - Delivery and Payment Terms	All sections related to Liquidated damages	The mechanism is not clear. Request to discuss and finalize at the financial stage. In addition, to establish a balanced and reciprocal agreement, a compensation mechanism should also be considered to compensate the Contractor for delays that are not his fault.	As per RFP
36	Page 31 Section 1.6 - Delivery and Payment Terms	Milestone payment tables	Request to discuss and finalize milestone payments during the financial stage, after SCL will qualify the Bidder.	As per RFP
37	Page 33 Section 1.6 - Delivery and Payment Terms 1.6.2 Payment Terms Table.7 S.No 1, line 4	Successful running of the equipment for one month after acceptance signoff	Please note that this is non-standard term; the Bidder recommends that this will be covered under warranty.	As per RFP
38	Page 43 Section 1.18 - Bid Security	Bid Security - EMD in the form of a Bank Guarantee	Please waive the EMD requirement during pre-qualification stage. We request that the EMD be required only at the financial phase, after SCL's technical evaluation and approval of the Bidder to proceed to the financial phase.	As per RFP
39	Page 45 1.21 Submission of Bids Sub section 2)	2) The Bid is to be submitted on the document downloaded from Official Website, the Bidder shall be responsible for its accuracy and correctness as per the version uploaded by the Authority and shall ensure that there are no changes caused in the content of the	How should a bidder propose changes or modifications to the SCL specification or submission documents within the bid? If the bidder has observations or suggestions, how should they be presented?	Mechanism defined on Page-11 of the RFP (Overall Bid Process)

		downloaded document. In case of any discrepancy between the document used for submission by the Bidder and the version uploaded by the Authority, the latter shall prevail.		
40	Page 45 1.21 Submission of Bids Sub sections 4) and 6)	4) The Pre-Qualification Bid should be valid for 12 months from Bid Due Date or till signing of the Contract Agreement, whichever is later. 6) Submission of Financial Bid: ...The Financial Bid must be firm and fixed and should be valid for at least 360 (three hundred and sixty) days from the Bid Due Date.	How does the ~1 year bids validation align with the SCL Bid Schedule, as detailed on page 10, section 1.3	As per RFP
41	Page 48 1.23 Technical Evaluation, Bid Package 2, Execution Capacity Sub section b)	The Bidder(s) should have or establish access to respective 180nm process technologies that they bid for:...Have or establish access to RF-CMOS /BCD /CIS Technology	Please provide further details regarding the evaluation criteria. The Bidder to have a proven mature IP technology based on HVM fab - please confirm.	Defined in Appendix-13, 14 & 15 of the RFP.
42	Page 48 Section 1.24 - Financial Evaluation	For the purpose of evaluation of Financial Bids, the Bidders shall quote the Bid Parameter – Total Cost in INR Core.	The prices are listed in INR. Please confirm that a foreign bidder can submit quotes also in USD. Please confirm that the Contractor's invoice and payment can be processed in USD	As per RFP
43	Page 48 onward Section 1.24 - Financial Evaluation	Table 9: Financial Bid Format Table 10: Bid Package 1 Total Cost Break-Up	SCL expects to receive an open-book or pass-through cost basis CAMC supplies (as per Page 24, Section V, Subsections 6 and 7), this implies that payment for these items will be based on actual expenses. Therefore, does SCL expects that the quote for the CAMC will exclude such items? Please elaborate . <u>Bidder recommendation , please confirm:</u> In order to meet the uptime requirements Bidder to manage low turn inventory such as nonconsumable spares and backup parts and include as part of the CAMC price. High turns inventory such consumables and raw materials can be transacted under "Open-book or pass-through cost basis "mechanism (to be defined). Note: managing low turns items requires the Bidder to keep adequate stock for many such items for uncertain period which has a significant capex investment. Supporting low turns items also requires a special expedited delivery mode to minimize tool down time.	As per RFP
44	Page 52 1.28 Contract Agreement	1.28 Contract Agreement The Selected Bidder(s) shall be required to execute the Contract Agreement(s) within 30 (thirty) days of the issue of the LoA by satisfying other	This section is unclear. Please elaborate on SCL's expectations	As per RFP. Vendor to provide detailed project implementation timeline for all phases and stages within delivery period defined in RFP.

		terms and conditions as specified in this RFP to be carried out before signing of the Contract Agreement(s) for the Bid Package(s) awarded to them.		
45	Page 58 Appendix 2 : Proposed Equipment Replacement Lines: 9-12	Mems tools wafer loading configuration	Are the six new MEMS tools to be configurated 'open cassette' of Smifed? Please elaborate on the configuration for each tool	Details will be made available to the Qualified Bidders through secured access to Data Room after NDA.
46	Page 58-60 Appendix 2 : Proposed Equipment Replacement Appendix 3 : Proposed Equipment Addition	Lists of Equipment type, Make and Model (Replacement and Addition)	Is SCL willing to consider other tool type / OEM? This can be done at financial phase.	As per RFP
47	Page 59, Appendix 3: Proposed Equipment Addition Lines, 7,9	Photo tools	As SCL interested in CIS stitching technology, can SCL consider other Make?	As per RFP
48	Page 60 Appendix 3 : Proposed Equipment Addition Lines: 5, 6	TEL Zeta Viper for Photo Resist Strip TEL Zeta Viper for Pre Diffusion Clean	Please confirm that the data is correct	As per RFP
49	Page 60 Appendix 3 : Proposed Equipment Addition Lines: 22-23	Mems tools wafer loading configuration.	Are the six new MEMS tools to be configurated 'open cassette' of Smifed? Please elaborate on the configuration for each tool	Details will be made available to the Qualified Bidders through secured access to Data Room after NDA.
50	Page 60 Appendix 3 : Proposed Equipment Addition Lines: 23	Rena Wet Bench	What is the equipment configuration? What are the process types in each bath? Is SCL open to considering a different OEM?	Details will be made available to the Qualified Bidders through secured access to Data Room after NDA.
51	Page 61 Appendix 4 : Proposed Equipment Layout	SCL Proposed Equipment Layout	The layout figure is unclear. Please provide a clearer version	Shall be shared.
52	Page 62 Appendix 5 : Details for Cleanroom and Utilities Modifications / Augmentations Section A. CLEAN ROOMS MODIFICATION Sub-section 7	7. Removal of all the existing ULPA filters and Supply and installation of new ULPA filters in Clean rooms is covered in scope of the Contractor(s). Filter coverage shall be as under: Class 3 : 100% Class 4 : 100% Class 5 : 70% minimum Class 6 : 30% minimum Class 7 : 20% minimum	Is it applicable only for the cleanroom modifications or all the filters has to be replaced with new one?	As per RFP
53	Page 74 Section D. CODES AND STANDARDS	Table line 3: Pressure Regulators Veriflo / /AP Tech/ Tescom / Rotarex Line 4: Point of use valves (Diaphragm Valves) / Tescom /Ap Tech / Hamlet / Rotarex	Request to add Fujikin, Carten	As per RFP
54	Page 115	3) Contractor(s) shall provide	The Bidder will focus on Si needed for technology	Purpose of the testchip is defined in

	Appendix 13 : Detailed Scope of Work for RFCMOS Technology in SCL 180nm CMOS Process Sub-section 3)	comprehensive test chip and the work plan of wafer experiments and execution support for fabrication of RF-Test chips at SCL.	modeling	Appendix-13, 14 & 15 for establishing the technology as per the RFP scope.
Clarifications Requested				
55	Page 115, 116 Appendix 13 : Detailed Scope of Work for RFCMOS Technology in SCL 180nm CMOS Process Sub-section 8)	8) Contractor(s) shall provide initial set of RFCMOS PDK documents. Contractor(s) shall upgrade existing SCL PDK for enablement of RFCMOS designs along with suggestion and assistance to establish EDA flow for RFIC design. Contractor(s) shall integrate RFCMOS PDK into existing baseline PDK of SCL CMOS 180nm process. Design enablement should include, I/O Pad libraries, Reference Design Flows, Design Rule Manual (DRM), Model file, Symbol library, Pcell library, DRC & ERC rule file, LVS rule file, PEX rule file, DFM rule file / utility, dummy fill file / utility, Antenna file / utility, Process stack information for Electro-Magnetic (EM) simulation (applicable for RFCMOS), documentation, other relevant files, etc. Preferably all PDKs should have coverage for industry-leading EDA vendors (Synopsys, Cadence, Siemens and Keysight) catering to their respective strength	1) Please note that the I/O pad library that SCL already has is suitable also for this technology. No need High frequency I/O pad library 2) Please confirm the following design tools. P cell literary | DRC / LVS/ ERC /DFM /Utilities | PEX | Spice Cadence (Virtuoso OA) | Siemens calibre, Cadence PVS | Calibre XRC, Cadence Quantus | Spectra HSpice	1. I/O pads as provided in the I/O library shall meet the requirements of Page 27, B.1.f. 2. Available
56	Page 116 Appendix 13 : Detailed Scope of Work for RFCMOS Technology in SCL 180nm CMOS Process Sub-section 9)	9) Contractor(s) shall perform models tuning & qualification to reliability verification and update the SCL PDK as per the optimized performance in SCL process	Using the Bidder RF CMOS will not required reliability qualification.	Contractor(s) shall perform models tuning and update the SCL PDK as per the optimized performance in SCL process. Please refer Corrigendum
57	Page 116 Appendix 13 : Detailed Scope of Work for RFCMOS Technology in SCL 180nm CMOS Process Sub-section 12)	12) Contractor(s) shall provide design infrastructure like but not limited to I/O pads, any other basic building block circuits, which is essential for circuit designers.	SCL existing I/O that are matched to the RF-CMOS tech; The Bidder can also provide RF-pad	As per RFP
58	Page 116 Appendix 13 : Detailed Scope of Work for RFCMOS Technology in SCL 180nm CMOS Process Sub-section 13), b)	b) RF-Inductors i) Single-ended Inductors with thick metal as last and (last-1) layers in both 5 and 6-metal flows ii) Stacked multi-metal inductors iii) Differential Inductors with MT (both 5 and 6-metal flows; stacked multi-metal inductors	Please confirm the following: The Bidder will provide symmetrical and a-symmetrical inductors supporting 5M1T and 6M1T including spiral and underpass with and without shielding	As per RFP
59	Page 116 Appendix 13 : Detailed Scope of	c) RF-Capacitors i) MIM Capacitor: 1fF/um2, 1.7fF/um2	Are all options are required in parallel ? Is 1.7 F/um2 meet the requirements ?	As per RFP

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	Work for RFCMOS Technology in SCL 180nm CMOS Process Sub-section 13 c i)	or 2.8fF/um2 single and stacked MIMs (2X) in both 5 and 6-metal option		
60	Page 117 Appendix 13 : Detailed Scope of Work for RFCMOS Technology in SCL 180nm CMOS Process Sub-section 13 e	e) RF ESD and Pads i) RF I/O pads (5 and 6-metal option) ii) RF pads with ESD protection diode with 5 and 6- metal option (1.8V and 3.3V)	SCL existing I/O pad library is suitable also for this technology. The Bidder will provide RF-pad	As per RFP
61	Page 119 Appendix 14: Detailed Scope of Work for BCD (HV LDMOS) Technology in SCL 180nm CMOS Process Sub-section 12)	12) Contractor(s) shall carry out reliability qualification (such as HCI, TDDB as relevant) of all delivered LDMOS / DEMOS variants as per JEDEC standards	The Bidder scope should be limited to consulting and support SCL with the reliability qualification. Please confirm	As per RFP Please refer Corrigendum
62	Page 119 Appendix 14: Detailed Scope of Work for BCD (HV LDMOS) Technology in SCL 180nm CMOS Process Sub-section 14 a) i)	i) Medium Voltage scalable N&P LDMOS (|Vgs|=1.8 & 5V, |Vds|=7-15V)	Please confirm the following: Medium Voltage scalable N&P LDMOS (|Vgs|=5V, |Vds|=7-14V)	"Medium Voltage scalable N&P LDMOS (|Vgs|=1.8 & 5V, |Vds|=7-15V)" **shall be read as** "Medium Voltage scalable N&P LDMOS (|Vgs|=3.3V and/ or 5V, |Vds|=7-15V)" Please refer Corrigendum
63	Page 119 Appendix 14: Detailed Scope of Work for BCD (HV LDMOS) Technology in SCL 180nm CMOS Process Sub-section 14 a) ii)	ii) High Voltage scalable N&P LDMOS (|Vgs|=1.8 & 5V, |Vds|=15-40V)	Please confirm the following: High Voltage scalable N&P LDMOS (|Vgs|=5V, |Vds|=15-40V)	"High Voltage scalable N&P LDMOS (|Vgs|=1.8 & 5V, |Vds|=15-40V)" **shall be read as** "High Voltage scalable N&P LDMOS (|Vgs|=3.3V and/or 5V, |Vds|=15-40V)" Please refer Corrigendum
64	Page 119 Appendix 14: Detailed Scope of Work for BCD (HV LDMOS) Technology in SCL 180nm CMOS Process Sub-section 14 a) ii)	iii) Scalable N&P DEMOS (|Vgs|=5V, |Vds|=up to 40V)	Please confirm the following: N&P DEMOS (|Vgs|=5V, |Vds|=up to 40V)	"Scalable N&P DEMOS (|Vgs|=5V, |Vds|=up to 40V)" **shall be read as** "Scalable N&P DEMOS (|Vgs|=3.3V and/or 5V, | Vds|=up to 40V)" Please refer Corrigendum
65	Page 121 Appendix 15 : Detailed Scope of Work for CIS Technology in SCL 180nm CMOS Process Sub-section 1)	1) The technology provider shall demonstrate a completely functional 1Kx1K CIS detector with global shutter operation in SCL 180nm fab	The demonstrator (A.K.A Scout Vehicle) is flexible, yet limited to VGA resolution at 4um pixel., Larger pixels will result in smaller array's fitting in the available 2,560um X 1,920um If 1KX1K is mandatory , need clear definitions and SOW in order to evaluate	Please refer Appendix 15 of RFP. Array size of 5x5 with pixel size of 5, 10 & 40 um is required. In addition, functional demonstration of array size 1Kx1K or larger with typical pixel size of 10um is also required as per the RFP.
66	Page 121 Appendix 15 : Detailed Scope of Work for CIS Technology in SCL 180nm CMOS Process Sub-section 1) d)	d) Fully depleted thick substrate for Near IR for soft Xray sensitivity and global shutter operation	This is new technology , not standard CIS. Is it required at the scope of this bid ? If yes , clear definitions are required in order to do evaluation	Details will be made available to the Qualified Bidders through secured access to Data Room after NDA.
67	Page 121 Appendix 15 : Detailed Scope of Work for CIS Technology in SCL	e) Enhanced sensitivity in NIR region (> 70% QE for wavelengths above 800nm)	Bidder clarification: For FSI, Max QE at 800nm >65% (QE at 900nm >40%, dropping to <10% at 1000nm	QE shall be >60% at 800nm

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	180nm CMOS Process Sub-section 1) e)			
68	Page 121 Appendix 15 : Detailed Scope of Work for CIS Technology in SCL 180nm CMOS Process Sub-section 1) f)		Conversion factor and dark signal depend on specific pixel requirements/design	As per RFP
69	Page 122 Appendix 15 : Detailed Scope of Work for CIS Technology in SCL 180nm CMOS Process Sub-section 8) b) i)	i) CIS-Test Chips and technology demonstrator circuits de	Bidder clarification: Technology demonstrator (A.K.A. Scout) boards and training for characterization, and embedding applicable pixels	Please refer Appendix 15 of RFP. Array size of 5x5 with pixel size of 5, 10 & 40 um is required. In addition, functional demonstration of array size 1Kx1K or larger with typical pixel size of 10um is also required as per the RFP.

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Sr No	RFP Page No/ Section/ Clause No	Content of RFP	Point of Clarification	SCL Response
1	Pg 9, Section 1.2	Augment the capacity of the line to at least 1500 WSPM, build redundancy and improve operational performance	Provide current operational parameters along with through put for existing 8-inch 180nm CMOS fab-line	Current installed capacity is around 500-600 WSPM. Capacity calculation can be done based on standard method based on 4Metal digital logic process at 180nm
2	Pg 10 , Section 1.3	Table 1-Bid Schedule	Since the bid involves various packages and tool supplies which needs allignment with potential partners for consortium, we request an extension of time till 15th April'25 for submission of Pre-Bid qualification bid.	Vendors are requested to adher to the Bid submission date, as per RFP
3	Pg 12 , Section 1.5	Bid package 1	Can Bidder have provision to exclude item 5 (CAMC) under Bid package-1 and quote as separate package?	Quote for Bid package 1 shall include all components of the Bid package 1
4	Pg 12, Section 1.5	Bid package 1	SCL to provide all necessary existing detailed Architectural/MEP engineering documents including masterplan for the detail study of spaces,utilities , finishes schedule and Design Basis.	All details will be provided as part of the Data room with Qualified bidders after NDA

Vendor 7

5	Pg 12, Section 1.5	Bid package 1-Gap Analysis & Detailed Study to determine precise requirements for cleanroom and utilities sources and distribution modifications/augmentations and validate proposed plan for augmentation of 8-inch line to at least 1500 WSPM	Based on the modification/augmentation needed for 8-inch line , do we have existing utility capacity to cater the requirement or additional buildings/expansion shall come into action? Basis that Approval dwgs for Permit to be developed before proceeding for IFC packages. Further CPCB clearance , CTE and CTO approvals might be needed based on the expansion line. Obtaining necessary lincences/approvals will be under scope of SCL	As mentioned in the RFP, the utilities requirement shall be analysed as per Phase- 0 of the Project (Bid Package-1). Regarding the statutory approvals from various agencies , SCL will bear the application fee. The selected contractor shall however provide the relevant information and liaison for the required renewal of the consents to operate/ establish.
6	Pg 13 , Section 1.5.1, Point # 1.a	) Prepare the utility matrix basis proposed equipment upgrades and installations (replacement and additional) and the utility matrix for the existing tools to arrive at the final utility matrix. Based upon the final utility matrix, carry out the assessment of the existing utilities to analyse the gaps between the utility requirements viz-a-viz existing utilities (enclosed in Appendix 6A : Existing Utility Generations Plants & System Capacity)	SCL to provide utility matrix for the existing tools	As per RFP

Vendor 7

7	Pg 13 , Section 1.5.1, Point # 1.d	Study the different possible layouts for the location of proposed tools and their subsystems (like pumps, chillers, LDS, power/control racks, transformers etc.) in the fab and sub-fab taking into account all constraints of the facility and existing setup (see Appendix 6B : Constraints of Existing Infrastructure)	SCL to provide tool layout along with General Arrangement drawing with their sub systems for following tools; - Upgrade - Replacement - Relocation	Existing tool layout GA will be provided as part of the Data room with Qualified bidders after NDA. For additional & replacement tools selcected contractor will have to be worked out the tool layout .
8	Pg 13 , Section 1.5.1, Point # 1.e	e) Re-check structural strength and vibration specs of the existing fab building on waffle slab & non-waffle slab areas and study impact of additional loads and pop-outs on building/slabs due to proposed equipment addition	Existing FAB building Civil, Structural & Architectural, MEP Design Basis Report, STAAD analysis files, load & design calculations, Vibration specs to be provided by SCL	All details will be provided as part of the Data room with Qualified bidders after NDA
9	Pg 15 , Section 1.5.1, Point # II	Detailed Engineering and Execution of Cleanroom & Utilities Modifications /Augmentations & Tools Hook-up	We understand tool hook up design for only Upgrade, Replacement & addition of tools are in scope of bidders.	Yes. Any modifications in laterals/headers required for additional POCs for tool hook-up are also part of the scope as per RFP.

Vendor 7

10	Pg 16 , Section 1.5.1, Point # II .5)	For cleanroom modification, the required modification in the supply air duct work is covered in the scope of the Contractor(s). This includes Supply, Installation, Testing & Commissioning of GI duct, volume control dampers, flexible ducting, supports, etc.	In order to perform modifications required in existing utilties/distribution network, existing layouts in CAD format will be shared to bidders post award for developing detailed design	All details will be provided as part of the Data room with Qualified bidders after NDA
11	Page 23, Section D	D. Warranty	Confirm Warranty doesn't apply on relocated tools and existing tools	Refer Page 24, RFP mentions as "The warranty terms of the supplied equipment and upgrades may be appropriately adjusted in the CAMC".
12	Page 24, Section V	Preventive and corrective maintenance of equipment to maintain minimum equipment uptime of 80% calculated on monthly basis. In case the target uptime is not met, an annual penalty per equipment shall be levied.	Clarify on Equipment uptime of 80%- is this limited to running of equipment or through put of 1500 WSPM?	It is related to average uptime of the equipment under CAMC

Vendor 7

13	Pg 58, Appendix 2	Note: A MEMS Coater tool of Obducat make is already under procurement by the Authority, and hence not part of the proposed replacement list here for purchase orders. However, this tool shall be considered part of the scope for the Contractor(s) for all other work such as the Gap Analysis & Detailed Study, Detailed Engineering and Execution of Cleanroom & Utilities Modifications / Augmentations & Tools Hook-Up and Comprehensive AMC.	We understand MEMS coater tool is already under procurement by SCL, clarify if placing this tool on pedestal - is this part of Bid Package -1? Model and specification of Tools to be provided by SCL	SCL will be responsible for installation of the MEMS Coater. If the MEMS Coater requires any movement as per proposed layout by the Bidder, it will be part of bidder's scope
14	Pg 61, Appendix 4	Appendix 4 : Proposed Equipment Layout	Readible copy of Equipment layout along with section to be provided by SCL	Existing Equipment layout will be provided.
15	Pg 62, Appendix 5	Appendix 5 : Details for Cleanroom and Utilities Modifications / Augmentations	Existing technical data sheet to be shared for all the Arch finishes used in Clean room and Clean room Zoning layout.	All details will be provided as part of the Data room with Qualified bidders after NDA
16	Pg 69, Point 13	Process Exhaust Ducting & PROCESS COOLING WATER (PCW) SYSTEM:	Please clarify requirement of Temperature sensors in exhaust ducting & PCW Piping from POC to the tool	Not required.
17	Pg 74, Section D	PVDF DISTRIBUTION NETWORK FOR UPW	Grade of UPW water to be provided	UPW plant is already available

Vendor 7

18	Pg 75,Section A	The valves shall be of PVDF body with Teflon diaphragm provided with position indicators. Valves upto 2" size shall be butt fused. Valves of 2 ½ " or larger size shall be butt fused or flanged.	PVDF Diaphragm valves should be zero dead leg type?	Yes
19	Pg 76	-	Clarify if any Inline Analyzers to be provided in Sub-loop or at POC to monitor UPW quality, For ex TOC, Silica, Microbial count?	Already available
20	Pg 78	PIPING: The chemical and acid drains shall run through Sch-80 CPVC tube PIPING & FITTINGS: Welded SS304	Piping for Drains & Organic solvents should be double containment type?	Existing Acid Drains (CPVC) and Solvant drains (Welded SS304) are not double containment type
21	Page 92,Section 8	The scope includes design, supply, installation, testing and commissioning of all material form providing power upto the local isolation for the process tools envisaged to be installed by SCL in the Clean Rooms as per the equipment layout.	Clarify on process tools envisaged to be installed by SCL? Are there any such tools under SCL scope?	No
22	Page 96, Exclusion items	2) Configuration of TGM Panel/ concentrator and testing. 3) TGM and LSS SCADA Augmentation to display Alarms & faults, Development of newScreens etc.	We understand SITC of Toxic gas monitoring panel including configuration is excluded from Package 1	TGM is already installed. For the proposed Additional / to be upgraded / Replacement tools, TGM sensors, as required shall be provided and interfaced with the existing TGM system by the selected contractor, as part of this RFP.

Vendor 7

23	Page 97	Appendix 6A : Existing Utility Generation Plants & System Capac	Please clarify if there is any spare capacity available in following generation systems - '- CDA, - PVAC - UPW	-Shall be checked as part of Phase-0 : Gap~~a~~ analysis and feasibility study (Bid Package -1).
24	Page 106, Appendix 9	Appendix 9 : Existing Sub-Fab Layout	Readible copy of Existing sub fab layout along with section to be provided by SCL	It will be provided
25	General		Clarify on scope of Chemical delivery systems for tools which are part of Bid package-1? Is it by bidder or SCL?	All accessories including chemical delivery systems to be supplied and installed by the Bidder
26	General		Clarify scope of civil infrastructure readiness for Bid package-1?	The utilities requirement and civil infrasturcture shall be analysed as per Phase 0 (Bid Package-1) as mentioned in the RFP
27	Gases		Gas purity / impurity levels specification to be provided for existing facility	All details will be provided as part of the Data room with Qualified bidders after NDA
28	Gases		Specialty gases consumption (if not part of utility matrix) and details of existing storage/sourcing of bulk and specialty gases to be provided	All details will be provided as part of the Data room with Qualified bidders after NDA
29	Gases/Page 71	Each valve shall be tested by Pressurization to 150 psi with 100 % Argon. Valves shall be tested for compliance with a leak rate not exceeding 1 x10-9atm Cu.cm/sec between the valves and ambient, and across seat.	In general; valve leak testing performed in manufacturers facility only? Certification from OEM will be sufficient	Yes.

Vendor 7

30	Gases/Page 73	Maintain the system at 250 psig static pressure for a period not less than 24 hours without a delta pressure 0 psi. During this period Argon gas source is disconnected and isolated.	In general practice ; Test pressure is 1.1 times of the design; requested to check & re confirm.	As per RFP
31	Gases/Page 73	5) Using the approved (i.e. Edwards, Model 300E, Portable Helium Leak Detector or equivalent with sensitivity at least 4 x 10-10 atm. Cu cm/sec. As determined in accordance with American Vacuum Society Standard T.S. 2.1 and Record in chart strip charge recorder), locate and identify all leaks by systematically checking all welds, valves and VCR connections. Clearly mark and document leaks. Report leaks to SCL in writing. 6) Inboard Helium leak check – 1x10-9 sccm He/sec shall also be performed.	Both Type of Helium leak Test (high vacuum testing or sniffing He leak test) to be performed or either of these has to be performed?	As per RFP
32	Page 94 G: Life safety system	Sprinkler system	please confirm FM (factory manuals) compliance for fire protection system design and installation	Details will be provided as part of the Data room with Qualified bidders after NDA
33	Green certification		if existing building is having Green Building certification LEED /IGBC, kindly provide the details and also please confirm the same requirement applies for augemented facility	Green building construction is not part of Scope of RFP

Vendor 7

34	Chemical System	Page25, Section V. CAMC item7, mentioned "Supply of some high-consumption raw materials such as chemicals, gases, wafers, etc. on openbook or pass-through cost basis"	Does wafer supply part of CAMC? Do we need to supply chemicals and gases only for CAMC?	No
35	Chemical System		Exisiting chemical delivery systems details to be provided	details will be provided as part of the Data room with Qualified bidders after NDA
36	Electrical	1.5.1 Bid Package-1 Page 13 of 169 of pDF file. Cluase I - 1 (b)	We understand all native (editable) files/Drawings will be provided us to check/Verify the capacity of the existing post qualifying in Technical bid	Available details will be provided as part of the Data room with Qualified bidders after NDA
37	Civil & Structural		Since this is existing facility we believe SCL will provide Geotech Report	Available details will be provided as part of the Data room with Qualified bidders after NDA
38	Civil & Structural		Please share plans & sectional drawings of existing building (including Foundation layout & Underground Utilities layout) showing Civil, Structural & Architectural detail for the building,	Available details will be provided as part of the Data room with Qualified bidders after NDA
39	Civil & Structural		Do the Civil & Structural drawings and digital model (if any) have to be delivered in BIM?	Yes
40	Civil & Structural		Please clarify if there is an Insurance agency for the facilty and if any specific approval is required for design elements?	No

Vendor 8

Referring to the recent RFP posted by SCL, could you please confirm if you are looking for any digital IPs like Processor cores or system IPs – to build SOCs on the 180nm fab?

From the table below, it appears that you are looking for a vendor who can tape-out a complete SOC in your fab, is my understanding correct? Alternatively if you need access to any vendor IPs, I would be happy to discuss further.

S.No	Technology Cost Component	Milestone	Payment (% of Quoted Technology Cost Component)
Bid Package 2 (for each Item/IP)			
1	Supply and qualification of technology IP(s)	Receipt of initial documentation on IP including test chip GDS	10%
		Tapeout-1 and sign-off on characterization test results	20%
		Tapeout-2 and sign-off on qualification test results	20%
		Final delivery of IP including PDKs, requisite documentation and training	30%
		Successful running of the technology on SCL flow for two months after final delivery|	20%

*SCL Reply: **The IPs being offered are not commensurate with technology IPs & test chip requirements stated in RFP. IPs to be provided as per RFP.***

Vendor:9

The questionnaire as pre bid queries reads as hereunder
–

1. The drawing in tender are not readable, hence requested to please upload clear & readable drg. Preferably as soft copy if not then in pdf. Format.

    a. Existing Lay out with tools placement, area classification etc. of complete floor.
    SCL Reply :- ***PDF will be uploaded***

    b. Proposed Lay out with tools placement, area classification etc. –
    SCL Reply :- ***Bidder to provide***

    c. 2 cross section of the building –
    SCL Reply :- ***Will be provided as part of Data Room to the Qualified bidders after NDA***

    d. 2 Longitudinal sections of the building-
    SCL Reply :- ***Will be provided as part of Data Room to the Qualified bidders after NDA***

    e. Existing plant room layout with equipment placed for HVAC / Electricals / GDS / Exhaust etc. -
    SCL Reply :- ***Will be provided as part of Data Room to the Qualified bidders after NDA***

2. The pre qualification Bid proposal submission date may please be extended for 2 months because the nature of RFQ is such wherein consortium

    Formation is required with Overseas companies, this is little time consuming activity :-

SCL Reply ***All bidders are requested to comply with the schedule mentioned in the RFP***

Vendor 10

S.No.	**MES Queries**	**Queries from Page No. of RFP**	SCL reply
1	Please provide more information on which type of integration protocol and database used or supported by software like Yield Management Software, Facility Monitoring Software(FCMS) and Air Borne Particlulate Systems etc.Does mentioned	30	Data will be made available to the Qualified Bidder through secured access to Data Room after NDA.
2	Do you need capability of Design life cycle management for Fab?	123	No
3	Limit the running Recipe by the previous step processed EQP. Please elaborate given point.	124	For limited Equipment. Will be discussed with qualified bidders
4	Can you provide all possible communication buses list for all Machines?other than TIBCO,Apache Pulsar	134	Data will be made available to the Qualified Bidder through secured access to Data Room after NDA.
5	Please provide process flow diagram of Fab manufacturing.		Data will be made available to the Qualified Bidder through secured access to Data Room after NDA.
6	Can you provide list of Equipments which need to be integrated with MES?		List given in RFP

Vendor - 11

S.No.	RFP Page No. Section– Subsection	Content of the RFP	**Points of Clarification**	SCL response
1	Page No.58 # 18. Area-PHOTO Type- Metrology CD-SEM	CD SEM **Hitachi S- 9300** Upgrade Details: 1. Hard disk upgrade (from mechanical HDD to RAID SSD)	Is it possible for SCL to check the possibility of the tool replacement. S9300 CD-SEM already EOL and no support now.	As per RFP

Vendor 12

1. The project will be bidding process which handle by SCL India? If yes, can you provide more information on the bidding procedure?
SCL Reply :- Pls refer RFP. Detailed Procedure is mentioned.

2. Any bidding due date?
SCL Reply :- 1st April,2025- For Technical Bid

3. SCL India will be responsible for issuing the purchase order for the new equipment?
SCL Reply :- As per Bid Package requirements
3. Which location within the SCL India FAB will the tool be installed?
SCL Reply :- In 8" CMOS Wafer Fab, as per RFP
4. What is the required timeline and delivery schedule for this tool?
SCL Reply :- Delivery time for Bid packages given in RFP
5. From the link you provided, I learn that 2 equipment from vendor was selected for SCL 8" fab enhancement project.
    - DNS SS-80EX 4 chamber

Appendix 2 : Proposed Equipment Replacement

#	Type	Area	Description	Reqd. Make, Model	Proposed Stage	Location
1	Process	DRY ETCH	Asher BEOL	Mattson Aspen II	Stage 1	Cleanroom
2	Process	WET ETCH	Scrubber	DNS SS-80EX 4 chamber	Stage 1	Cleanroom
3	Process	WET ETCH	Photo Resist Strip	TEL Zeta Viper	Stage 2	Cleanroom
4	Process	WET ETCH	Pre Diffusion Clean	DNS bath configuration with IPA dryer	Stage 2	Cleanroom
5	Metrology	DIFFUSION	CV Plotter	Quantox, SEMILAB, FAaST 300 SL	Stage 2	Cleanroom
6	Metrology	DIFFUSION	Film Thickness Ellipsometer	*SEMILAB, PS-2500*	Stage 2	Cleanroom
7	Metrology	INLINE YIELD	Optical Review Station	Zeiss Axiospect 302, with backside inspection	Stage 2	Cleanroom
8	Support	DIFFUSION	Quartz cleaner	Polyflow S-610	Stage 2	Cleanroom
9	Process	MEMS PHOTO	1x Mask Aligner	*SUSS Microtech Model No: SUSS MA200 Gen3*	Stage 3	6"Litho
10	Process	MEMS DRY	DRIE	*LAM Research Model: Alliance TM + 1x DSiE G System*	Stage 3	MEMS Fab Extension
11	Process	MEMS TF	E-beam metal dep	*Telemark,USA Model: SCT BC-18C*	Stage 3	Post CMOS
12	Process	MEMS DRY	PR Asher	*Trymax Plasma Tech, Model: NEO2222*	Stage 3	6" Wet

6. Beside these two equipment, Is there any forecast or plan for future vendor tool orders for SCL India FAB?
SCL Reply :- Current procurements as per Bid package 1 requirements specified in RFP
7. There are some of the equipment listed in appendix 2 (proposed equipment replacement) and appendix 3 (Proposed Equipment Addition). vendor could propose our equipment for these processes. I hope we could giving a chance to participate.
SCL Reply :- Current procurements as per Bid package 1 requirements specified in RFP

Vendor 12

Appendix 2 : Proposed Equipment Replacement

#	Type	Area	Description	Reqd. Make, Model	Proposed Stage	Location
1	Process	DRY ETCH	Asher BEOL	Mattson Aspen II	Stage 1	Cleanroom
2	Process	WET ETCH	Scrubber	DNS SS-80EX 4 chamber	Stage 1	Cleanroom
3	Process	WET ETCH	Photo Resist Strip	TEL Zeta Viper	Stage 2	Cleanroom
4	Process	WET ETCH	Pre Diffusion Clean	DNS bath configuration with IPA dryer	Stage 2	Cleanroom
5	Metrology	DIFFUSION	CV Plotter	Quantox, SEMILAB, FAaST 300 SL	Stage 2	Cleanroom
6	Metrology	DIFFUSION	Film Thickness Ellipsometer	*SEMILAB, PS-2500*	Stage 2	Cleanroom
		INLINE	Optical Review	Zeiss Axiospect		

Vendor 12

Appendix 3 : Proposed Equipment Addition

#	Type	Area	Description	Reqd. Make, Model	Proposed Stage	Location
1	Metrology	INLINE YIELD	CP measurement - Unpatterned wafer scan system	KLA Tencor SurfaceScan CP Measurement	Stage 1	Cleanroom
2	Process	DRY ETCH	Dielectric Etcher (1 Spacer Etch ch + 1 CS/Via etch ch)	LAM Flex Excelan 2300	Stage 2	Cleanroom
3	Process	DRY ETCH	Metal Etcher (1 DPS ch + 1 ASP ch)	AMAT Metal Etch Centura II	Stage 2	Cleanroom
4	Process	THIN FILM	Metal Sputter	ULVAC ENTRON W-200 TANDEM / AMAT	Stage 2	Cleanroom
5	Process	WET ETCH	Photo Resist Strip	TEL Zeta Viper	Stage 2	Cleanroom
6	Process	WET ETCH	Pre Diffusion Clean	TEL Zeta Viper	Stage 2	Cleanroom
7	Process	PHOTO	Scanner DUV	Nikon NSR S204B	Stage 2	Cleanroom
8	Process	WET ETCH	Solvent Strip BEOL	LAM, DVI (DV24)	Stage 2	Cleanroom
9	Process	PHOTO	Stepper MUV	Nikon NSR 2205i14E2	Stage 2	Cleanroom
10	Process	PHOTO	Track DUV	TEL ACT8	Stage 2	Cleanroom
11	Process	PHOTO	Track MUV	TEL ACT8	Stage 2	Cleanroom
12	Metrology	INLINE YIELD	Defect Inspection	KLA 2367 Pro	Stage 2	Cleanroom
13	Metrology	INLINE YIELD	Defect Inspection - Dark Field	8920 DF Mode with Backside and Bevel Inspection and optical review	Stage 2	Cleanroom
14	Metrology	INLINE YIELD	Optical Review Station	Zeiss Axiospect 302	Stage 2	Cleanroom
15	Metrology	INLINE YIELD	SEM Review Station	AMAT G6	Stage 2	Cleanroom
16	Support	PHOTO	Amine NMP detection	IMS AirSentry	Stage 2	Sub-fab
17	Support	ET	ET Prober	Electro Glass EG4090	Stage 2	Sub-fab
18	Support	ET	ET Tester	HP4070	Stage 2	Sub-fab
19	Support	ET	XSEM	Zeiss560 FESEM with EDX	Stage 2	Sub-fab
20	Process	CMP	CMP Oxide	AMAT Mirra 3400 Mesa 200mm	Stage 3	Cleanroom
21	Process	CMP	CMP Tungsten	AMAT Mirra 3400 Mesa 200mm	Stage 3	Cleanroom
22	Process	MEMS WET	Spin Rinse and Dryer	*Class1 Technologies SRD 8800HP*	Stage 3	
23	Process	MEMS WET	Wet Bench	*RENA Wet Bench*	Stage 3	

Can we have a meeting within this week to have a better understanding on SCL 8” enhancement project as well as the detail equipment requirement?

SCL Reply :- Pre Bid meeting is already over on 11th March

Vendor 12

Without the equipment config detail and the project info listed above, it is difficult for vendor to provide the proposal.Just to highlight, for detail discussion NDA is require.
We will prepare vendor NDA for your review. Can you provide below info for NDA draft?

SCL Reply :- **NDA can be done with Qualified bidders**

Vendor 13

Dear SCL Team,

I would like to inquire about the following:

1. The maturity level of the existing process.
SCL Reply :- ***SCL Process is qualified as per JEDEC JP-001***
2. The estimated turnaround time for receiving a test chip and measurement data after submitting a design.
SCL Reply E :- ***Pls refer RFP***
3. The estimated turnaround time for fabrication after tape-out.
SCL Reply :- ***Pls refer RFP***
4. The process for submitting test plans and measuring device data.
SCL Reply :- ***Can be discussed with Qualified Bidders after NDA***
5. The types of resources available at the fab that can work with contractors.
SCL Reply :- ***Can be discussed with Qualified Bidders***
6. The EDA flows that need to be supported.
SCL Reply :- ***Can be discussed with Qualified Bidders after NDA***
7. The availability of an existing PDK flow as a baseline.
SCL Reply :- ***Can be discussed with Qualified Bidders after NDA***

Annexure II

Vendor-6

Clarifications Requested		
S. No.	**Points of Clarification**	**SCL Reply**
1	If there are specific queries related to commercial terms, is obtaining a deviation feasible at this stage?	Please refer to RFP
2	We are encountering difficulties in applying to SCL RFP No. SCL/PS/45088/2025 and providing the required EMD. The RFP states: “This Bid Security is to safeguard against a Bidder(s) withdrawing or altering its bid during the bid validity period.” We fully agree with this requirement and intend to submit a bid. However, our bid may include observations, modifications, comments, and adjustments to certain technical requirements in the RFP. Our concern is that submitting a bid that does not fully comply with all the technical terms of the RFP may lead to the forfeiture of the EMD. Specifically: 1. The form of the bank guarantee states that the bid security can be forfeited if “the bidder fails to fulfill or comply with all or any of the terms and conditions contained in the RFP.” 2. Section 1.18(5)(d) of the RFP provides that the EMD may be forfeited if the bid is disqualified due to any violation of the conditions set out in the RFP. Given these provisions, it is unclear how we are expected to submit a bid while including necessary comments and modifications.	Please refer to RFP section 1.18(4) For unsuccessful Bidders EMD will be returned post declaration of the Selected Bidder(s). Instances of Forfeiture of Bid Security is listed in section 1.18(5) where it is categorical that bidder will be only forfeit for the reason covered in section 1.7 (Conflict of Interest), section 1.9 (Rights of the Authority), section 1.10 (Fair Practices & Anti-Corruption) and any other reason which is menioned in the RFP apart from above three sction only. Also refer section 1.5.1 – I (Gap Analysis & Detailed Study for Proposed Augmentation of 8-inch Line) allows Selected Bidder(s) to include necessary comments & modifications for finalization basis mutual agreement with SCL. Please refer to RFP section 1.18 (4) - For unsuccessful Bidders, EMD will be returned post declaration of the Selected Bidder(s). Instances of Forfeiture of Bid Security are listed in section 1.18(5d) wherein the Bidder will get disqualified from the RFP process for reasons covered in but not limited to section 1.7 (Conflict of Interest), section 1.9 (Rights of the Authority), section 1.10 (Fair Practices & Anti-Corruption), or any other clause in the RFP.
	Additionally, the terms of the RFP contain broad and vague provisions that grant SCL significant discretion in forfeiting the EMD. For example: 1. “The Authority finds any Bid to be unreasonable, impractical or unviable.” These terms are open to interpretation and lack clear criteria. 2. “The Bidder does not provide, within the time specified by the Authority, the supplemental information sought by THE AUTHORITY for evaluation of the Bid.” 3. There may be instances where the requested data is unavailable, potentially leading to forfeiture of the EMD. The Bidder is required to provide representations regarding other Bidders despite not having knowledge of them.	The authority will declear any bid unreasonable, impractical or unviable only within the interpretation of RFP scope of work.

Vendor-14

Clarifications Requested		
S. No.	**Points of Clarification**	**SCL Reply**
1	Supplying an OEM-refurbished unit is not possible. We can only provide a third-party refurbished unit without a software license. The user will need to purchase the license separately from the OEM. Please confirm if this is acceptable.	Please refer to RFP
2	We would like to confirm whether all subsections, including equipment supply and MES upgrades, can be submitted by different vendors. Additionally, if we intend to participate in a specific bid, could you please clarify the process for our participation?	Please refer to RFP

Vendor-15

Clarifications Requested		
S. No.	**Points of Clarification**	**SCL Reply**
1	Can you please share the overall time line of the project.	Please refer to RFP
2	Is it fixed, or can the vendor recommend the tool model for addition?	Please refer to RFP