

**CLARIFICATION PROVIDED TO FIRMS ON QUERIES PERTAINING TO EOI IN RESPECT OF  
'DIGITAL BEAMFORMING BASED SATELLITE TV'- MAKE II PROJECT**

<b><u>SI No</u></b>	<b><u>Queries</u></b>	<b><u>Justification/ Clarification</u></b>
(a)	<b>In Para 12 Time Frames and Critical Activities.</b> Request consider the Design and development of Prototype from Project Sanction Order to be 30 weeks instead of T0 ie Eoi response submission. Similarly the user trials and staff evaluation may be amended to 60 weeks from issue of project sanction order. Kindly mention timelines clearly with respect to Project Sanction order from Project Sanction Order to be 30 weeks	The query was attributed to misinterpretation of time lines and was lucidly explained and agreed upon.
(b)	<b>In Para 12 Time Frames and Critical Activities</b> If there are additional requirements from PSQRs during finalization of SQRs, there might be design effort and development time. How will that be addressed?	It was agreed upon the time lines mentioned have to be followed and sufficient time has been accorded to cater for contingencies if they arise
(c)	<b>In Para 13 (f)</b> It is specified that User Trials will be conducted post finalization of SQRs. What is the methodology for testing prototype?	It was brought out that a platform for testing onboard ships will be nominated for conducting User Trials.
(d)	<b>In Para 19 Technology</b> Instead of full beam former solution, it is proposed Electronic Beam Steering in Elevation and Mechanical Movement in Azimuth as this will be a better solution. As it is mechanical movement in Azimuth will be minimal and does not affect efficient operation	It was brought out that the solution must be a full beam former solution without any rotating and moving parts.
(e)	<b>In Para 20 Polarisation.</b> The DVB receivers world over operate in mainly V/H Polarisation. Hence the requirement of circular polarization may be done away with to reduce complexities.	The firms were explained about the requirement of circular polarization and it was agreed upon that circular polarization is required for the system
(f)	<b>In Para 21 Frequency of Operation</b> The frequency of operation is specified as 10-14 GHz ie entire Ku band. However, as the satellite TV system is receive only, the system operation can be in the allocated satellite bandwidth in the frequency range of 10.7-12.75GHz. Is that acceptable	Yes, whilst the system can be developed with frequency band of 10-14 GHz, finalization of frequency of operation would be undertaken post completion of development and user trials

(g)	<b>Para 22(b) Gain</b> The gain of 38.5 dB is not required for good reception. Globally for marine applications, a gain of 27.5 dB is sufficient with adequate link margins. Can this be modified?	Yes, whilst the system can be developed with gain of 27.5 dB, finalization of system gain would be undertaken post completion of development and user trials
(h)	<b>Para 24 Distribution</b> Is the prototype going to be tested below deck equipment. If yes instead of 64 RF outputs, limited chains may be tested in prototype phase? Please confirm.	Yes may be modified for only prototype but must be scalable to provide all 64 RF Outputs
(j)	Is there any firm demand to touch both end of frequencies (10-14 GHz) and some relaxation is also provided. What in case the band exceeds	Yes, whilst the system can be developed with frequency band of 10-14 GHz, finalization of frequency of operation would be undertaken post completion of development and user trials
(k)	Though Marinerz shall be participating in with our technology partner. Is the turnover criteria sacrosanct for startup as our technology partner is also new into business. We have technical capability and would be able to leverage the financial capability also. Kindly provide waiver for Indian Startup entity under "Buy Indian" clause of DPP, wherein 40% indigenous content can be provided.	If the firm can substantiate with evidence that they are a startup the criteria does not apply