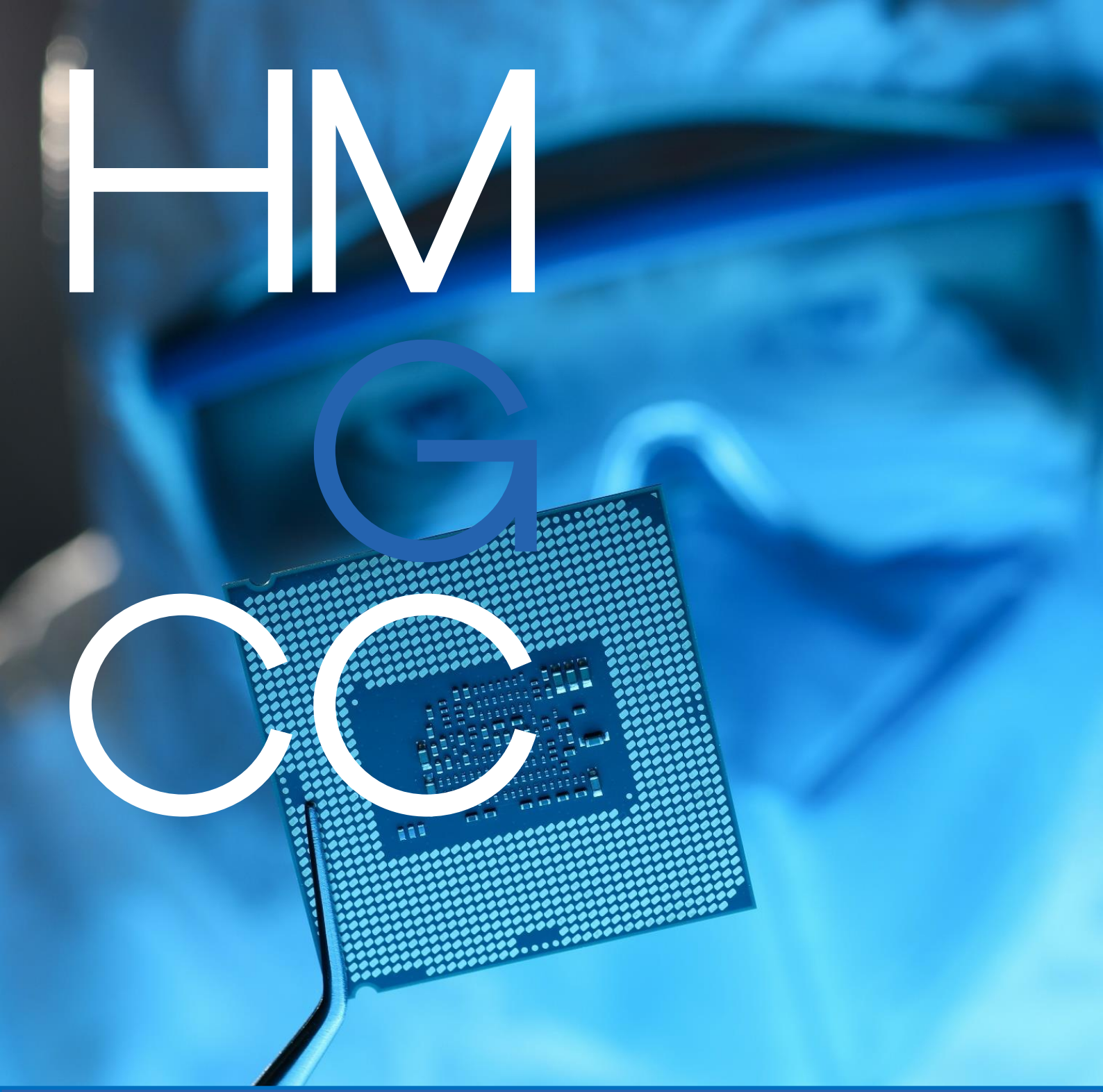

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Document Details: Clarification Q&A in response to the call for proposals

Challenge: Compact, Low Cost GNSS Simulator

Deadline for questions: 22 July 2025

#	Question	Answer
1.	Are you able to give any more detail on how existing COTS devices do not meet your needs? Is it mostly on cost, size, number of discrete GNSS signals that can be generated, or something else?	Currently the COTS solutions available are at significant cost and bespoke hardware/software licencing. These aspects impact our ability to scale the solution to meet our requirement.
2.	**Signal Frequencies** Is the simulation requirement for L1 signals only, or are other frequencies required, e.g. L2, L5 & L6?	L1 is the primary focus with L2 and others being aspirational.
3.	**NMEA signals** The requirement “Has the ability to feed NMEA” - does this mean to output an NMEA message based on the current simulation, or as an input for the simulation?	A set of locations and trajectory (NMEA) is the preferred output solution due to containing ground speed information. We need to feed data into the system in a standard format and if there are alternative solutions we are content to explore them.

4.	**Definition of real time** What is the timing accuracy requirement? 1s, 1ns? Does the simulation need to be synchronised with live sky for instant acquisition? If so, do we need to supply a 10MHz GPS Sourced reference clock? For genuine Ephemeris data, either the simulator has to be connected to a GPS engine with a live antenna, or downloaded from a connected database. Which one is required?	Within 1s would be sufficient for our purposes. Synchronization with live sky is not an explicit requirement though further context on how this would be achieved for simulated solutions would be interesting to understand. Ephemeris data is to be downloaded from database as we understand Ephemeris data is per satellite vs Almanac.
5.	Whilst we may not have a specified a TRL for an existing product that we make, is it sufficient to deliver a TRL6 bid with a roadmap of getting to 9, or do we need to have the partnerships as part of the bid?	A innovative TRL 6 solution is just as interesting as other TRL levels. For lower TRL solutions a roadmap would be appreciated in understanding the route to maturity. Partnerships are not required as part of this bid, bidders can consider collaboration/partnerships with other suppliers if they consider that this would strengthen their bid against the evaluation criteria.
6.	What is the commercial opportunity for the end product? In other words, do you have an idea of the number of units which would be required?	It has been identified that there are additional sectors that would benefit from GNSS simulation to enable product testing. Identified alternative Sectors: • Aerospace (aviation/UAS) certification of performance post GPS module integration

		• Automotive/Transport, analysis of GPS accuracy in relation to vehicle data streams (speed, direction etc.) • Mobile devices/Wearables/IOT testing (verification of small/integrated antenna solutions) • GPS module manufacturing certification Dependent upon the solution and the level of capability, the Authority would consider procurement of multiple units (exact numbers uncertain). Co-Creation is aware that other governmental departments may have interest in the solution.
7.	*Text from Challenge form:* "This challenge is open to TRLs 6 – 9. We recommend that proposals include both the existing and expected TRL at the end of the 12-week period. The essential, desirable and stretch targets are listed below." *Question:* Is this capability at the beginning of the challenge or the end?	The Authority would expect that a TRL of 6 being the minimum expected at the end of the 12-week challenge period. Co-Creation supports innovation and therefore is keen to understand how unique challenges will be met, noting the atypical nature, we encourage roadmaps to be submitted as to how the bidder intends to develop a solution.
8.	*Text from Challenge form:* "Must relay genuine Ephemeris and Almanac data (to enable A-GPS services). TLE data does not meet the requirement." *Question:* What is meant by "relay"? From where to where? Can the device connect to the internet and download ephemeris payload? (As there may be security concerns.)	The ability to perform either scenario would be beneficial. It would be desirable for the device to attempt to access configurable sources for services e.g. URLs but due to limitations this would not always be the case and therefore relevant Ephemeris/Almanac data may be captured on a webserver for use by the solution.

9.	*Text from Challenge form:* "Has ability to feed NMEA data" *Question:* Does this mean: feed an NMEA position into the system to be simulated; or feed out an NMEA stream on e.g. a serial connection, based on the currently simulated trajectory?	Feed out in NMEA stream based on the trajectory, please refer to question 3 (above) for further context.
10.	*Text from Challenge form:* "Scalable to generate up to 100 discrete GNSS signals." *Question:* If a Space Vehicle is transmitting on two frequencies derived from the same on-board master clock signal (e.g. L1 and L2) does this count as two discrete signals? In that case would only 50 space vehicles need to be simulated?	Please refer to question 2 above, the aspiration would be to generate as realistic environment as possible and we would be interested in the innovative solutions that you are able to offer.
11.	*Text from Challenge form:* "Must provide real-time simulation of GNSS full constellations using genuine data." *Question:* Constellations are multi-band, so does this mean a full-constellation is all space vehicles and all bands for a given constellation; or all space vehicles for a single band is sufficient?	A single band would be sufficient, i.e. L1 for all the satellites expected to be in view for a simulated ground location.