GCAP G2E Readies for Concept & Assessment Phase

By Andrew White

Global Combat Air Programme Electronics Evolution (G2E) – the consortium tasked with the design and development of integrated sensing and communications for the UK-Italy-Japan 6th-generation jet fighter – is preparing to launch its Concept & Assessment phase.

The news was announced in July at the Farnborough International Airshow by Andrew Howard, General Manager of the G2E consortium, which features **Leonardo UK**, **Leonardo SpA**, **ELT Group** and **Mitsubishi Electric**. The group is focused on the development of Integrated Sensing and Non-Kinetic Effects & Integrated Communications Systems (ISANKE & ICS).

The start of the so-called "Task One" phase follows the successful completion of "Task Zero," which concluded in June after three-months focused on developing G2E's operating model, project management tools, engineering interfaces, and commercial model.

Task One comes on the back of the award of an 18-month contract, worth £4.6 billion, from the government-led GCAP Agency to the Edgewing joint venture (featuring BAE Systems, Leonardo SpA and Japan Aircraft Industrial Enhancement Company) on July 3rd. Edgewing was awarded its first international contract – a three-month effort worth £686 million – by the GCAP Agency in April.

Task One will deliver "the infrastructure to unlock the potential of the concept and assessment phase," Howard explained, suggesting this next phase will help mature thinking and design ahead of a Design and Development Phase in the future. "Concepting and assessment is taking good ideas,

good TDPs [technology demonstrator programs] to the next level of maturity and refinement," he said. "What we're trying to do now is ensure that we have physical and digital infrastructure to unlock the potential of our people to do what is different to what's gone before."

According to G2E, Task One activities will include recruitment, new buildings, infrastructure and digital infrastructure as well as increased investment in high-powered computing, modelling and synthetics across sensing and communicating activities. "The next 18 months to two years will give us a much better insight into our ability to deliver all of that in the required timelines," Howard said.

In terms of deliverables within the Task One phase, G2E will focus on the integration of a "larger collection of sensors" compared to previous generations of combat air platforms. "There'll be more sensors, more communicating systems in more locations, and of course, size [of the aircraft] presents opportunity in that space," he explained. "We can choose better where to place things to maximize their benefit, and with more space to work with on the top and the bottom, and the front and the back, there's a lot more choice to exercise in the location of what we're trying to achieve. What I'm expecting at the end of Task One is a relatively mature concept that has a high level of fidelity in the cost, timing and deliverability impacts of the sensor and communicating solution on the aircraft, and a real positive confirmation that we can deliver the warfighter capability to the requirements that's been asked of us in the timescales that's been set," Howard said.

"We're taking individual sensor solutions, maturing them in technology terms, and understanding better our ability to create that integrated picture," he explained. "We're understanding better the limitations of the airframe, the constraints that we have to work within, all of the challenges you'd expect us to have to deal with; size, weight, power

requirements and those Edgewing can give us in order to deliver a solution.”

But Howard also warned: “We recognize that we’re in a changing environment, and some of those requirements are likely to be quite fluid as we learn and discover more. It will not be the finished product. We’re not going to have completed the design, but we will have very high levels of confidence that we are pursuing the right technologies for the right applications in the required timescales.”

Howard said, “My expectation is that the conclusion of Task One is a good understanding of what’s going to be part of the final platform and a high confidence that the power/propulsion domain can fully meet our energy needs, and that we we’re not then expecting to see necessarily large pivots away from the design philosophy that we’re producing.”