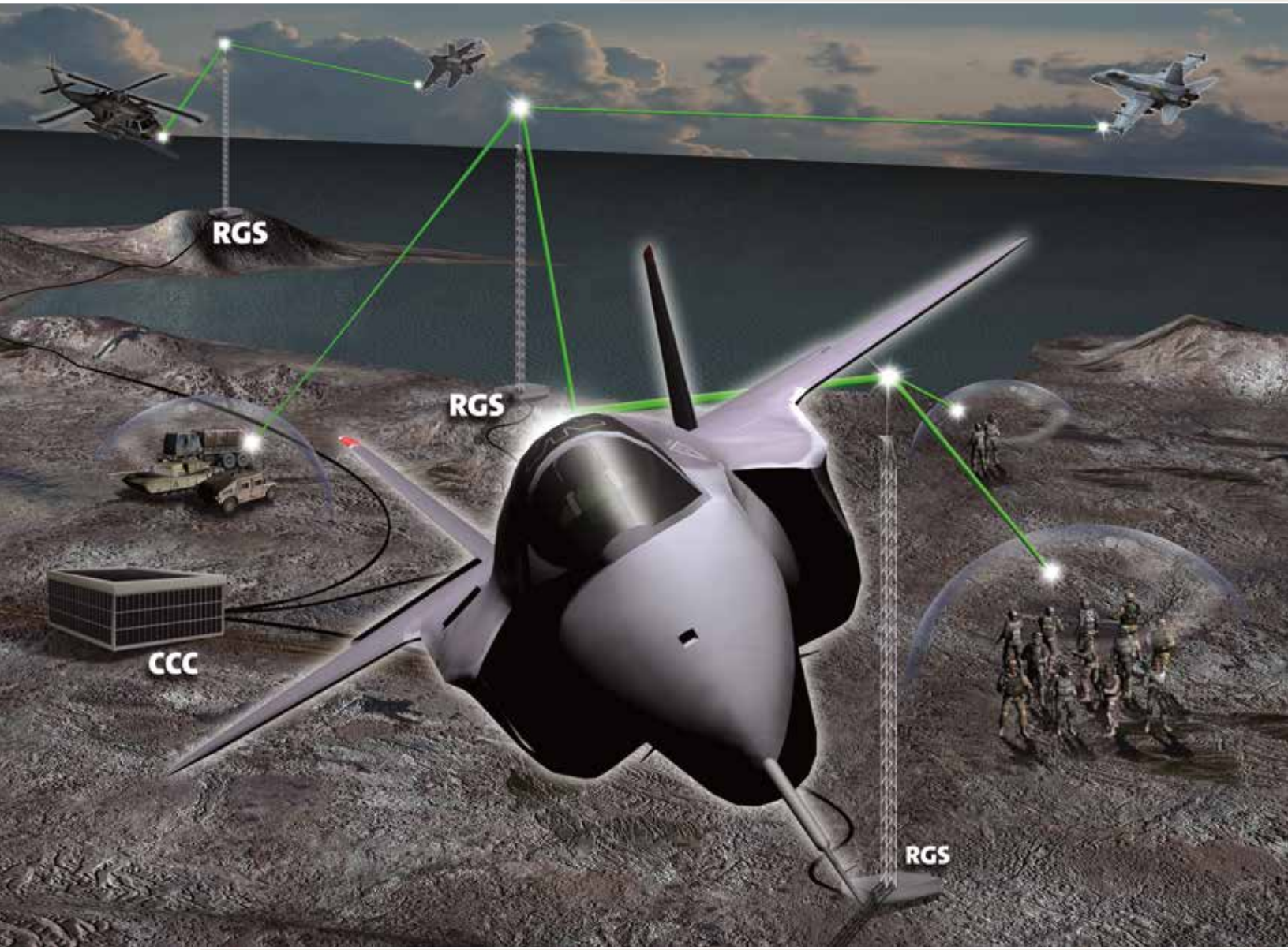
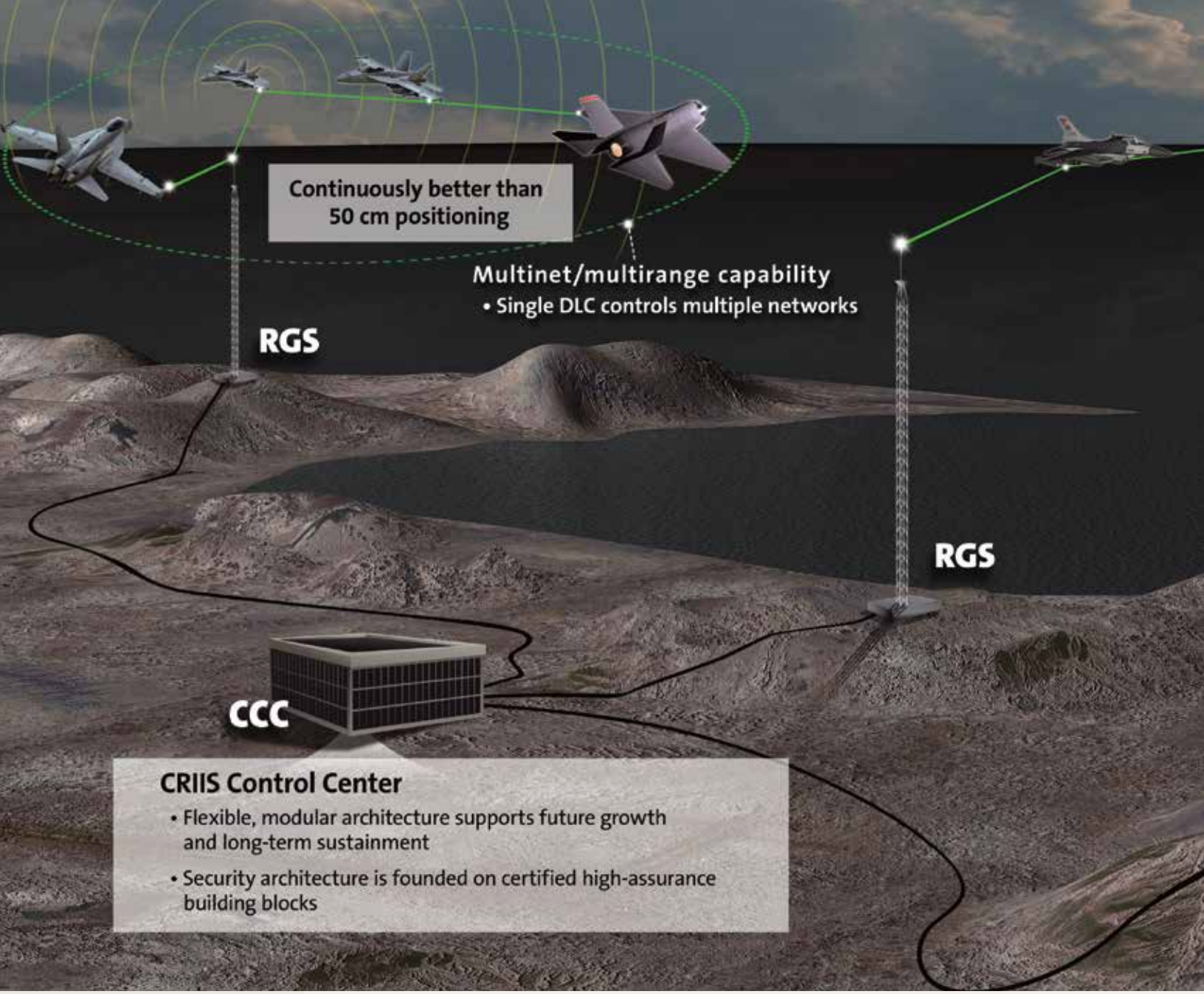
ROCKWELL COLLINS COMMON RANGE INTEGRATED INSTRUMENTATION SYSTEM (CRIIS)

The future of range instrumentation.



Rockwell Collins

Building trust every day



A proven solution for accurately testing next-generation weapon systems.

The speed and accuracy of today's advanced weapons systems have outstripped the ability of prior-generation Advanced Range Data System (ARDS)-based testing ranges to provide accurate performance data.

Rockwell Collins has assembled a team of innovators to introduce the Common Range Integrated Instrumentation System (CRIIS). CRIIS fulfills a critical DoD requirement to provide Time, Space and Position Information (TSPI) and systems evaluation data to support testing for a variety of current and next-generation platforms.

CRIIS consists of three "Increments" of capability. The first to be developed and fielded, called Increment 2, will replace the aging ARDS participant and ground infrastructure, and will provide significantly greater capabilities than ARDS. Increment 2 includes pod and internal mount air participant packages, plus all ground and security infrastructure enhancements. Increments 1 and 3 are options that follow the Increment 2 effort. Increment 1 is for use on ships, helicopters, unmanned aerial vehicles (UAVs), ground vehicles and dismounted soldiers. Increment 3 has significantly more accurate non-positional TSPI, for very high dynamic aircraft.

By giving range managers the flexiblity to mix any combination of these platforms in a given mission, CRIIS gives developers and military leaders the ability to ensure that next-generation systems can be developed and deployed to the field faster and with a greater degree of confidence.

CRIIS. The one solution that can scale to any level of capability a range or exercise requires.

CRIIS is much more than a replacement instrumentation system for test ranges. Steps have been taken to realize the U.S. DoD's vision of a common solution for test and training instrumentation which delivers the capability of communicating with the P5-Combat Training System's (P5-CTS) Advanced Data Link (ADL) equipped pod and range infrastructure, without hardware changes.

CRIIS is designed with growth capability to support additional training messages and real-time kill notifications. This means that the CRIIS pod or internal mount system you test with today can seamlessly interoperate with the P5-ADL training environment tomorrow. The CRIIS ground infrastructure also contains a TENA-compliant interface for sharing data with other test or training systems or ranges.

What you need, when you need it.

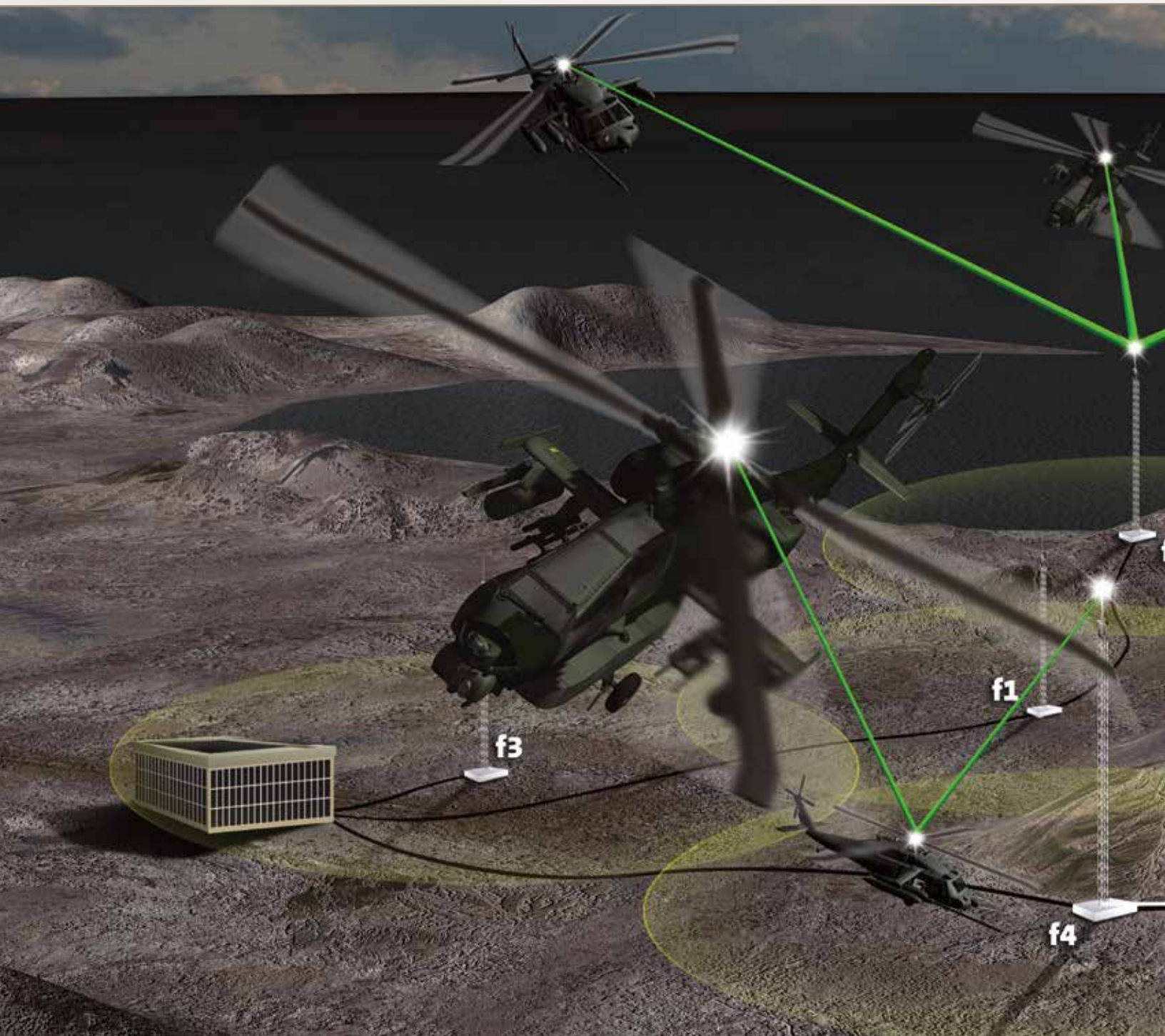
CRIIS's flexible, open architecture means that once it is installed, the range users can quickly scale it to any level of testing capability they need. This enables one range, and one CRIIS to satisfy the individual or combined needs of any mix of participants from high-speed aircraft, helicopters, ships, ground vehicles and dismounted troops.

Efficient, accurate TSPI testing for all domains.

Rockwell Collins CRIIS not only delivers the most accurate TSPI information, it utilizes the most advanced Global Differential GPS tracking to deliver the highest degree of accuracy regardless of flight dynamics or distance from a reference receiver. CRIIS uses operationally proven TSPI sensors, with significant software legacy, to reduce risk and increase reliability. Utilizing the most advanced GPS augmentation technologies, CRIIS is proven to reliably meet the 50 cm positioning accuracy across all dynamics. For offshore operations, only the range of the data link connection limits the system's accuracy.

From the system control center, to the remote ground stations and on to the vehicle-mounted pods and internal mount packages, CRIIS uses common, modular components within an open architecture to create an easily installable, reliable, and supportable system today, while supporting a low risk upgrade path for both future Increment 1 and 3 implementation. All system interfaces are 100% industry standard.

The net result is whether you are testing air, sea, land or personnel-based platforms, CRIIS can deliver the performance your test range needs today, while ensuring ease of future growth including the ability to support additional training messages and real-time kill notifications.



Highly flexible network connectivity for multiple platforms.

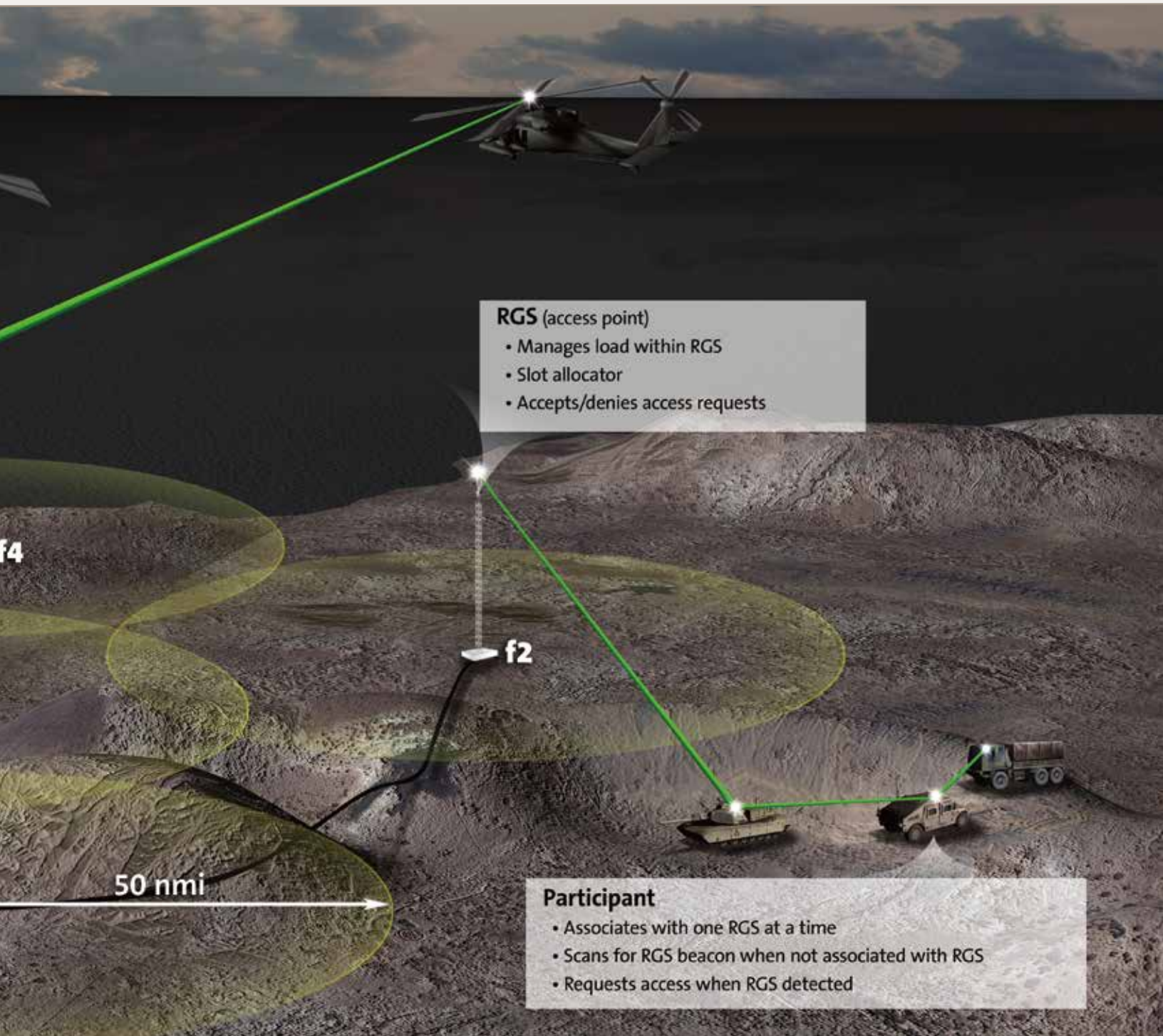
In today's rapidly advancing world of continuous capability enhancement, test range operators know that the abilities of a data collection system are critical to the efficient evaluation of system performance.

The High Throughput Data Link (HTDL), part of the Increment 2 solution, provides enhanced data transfer flexibility, control, and increased data capacity. It includes removable Type I encryption security. It also contains, as does every CRIIS data link on every platform, built-in Type III encryption.

The HTDL has been demonstrated by multiple flight tests, assuring connectivity in low and high dynamic environments.

Based upon Rockwell Collins' recognized Joint Tactical Radio System (JTRS) leadership and proven Software Communication Architecture (SCA) foundations, it is capable of hosting the ad hoc CRIIS Test Waveform (CTW), plus future training waveforms.

The relay capability extends high-rate communications well offshore, with the added benefit of providing 50 cm TSPI accuracy to distant participants. The dismounted soldier and vehicle configurations use similar COTS data links, along with an operationally-proven common networking layer, as demonstrated at White Sands Missile Range.



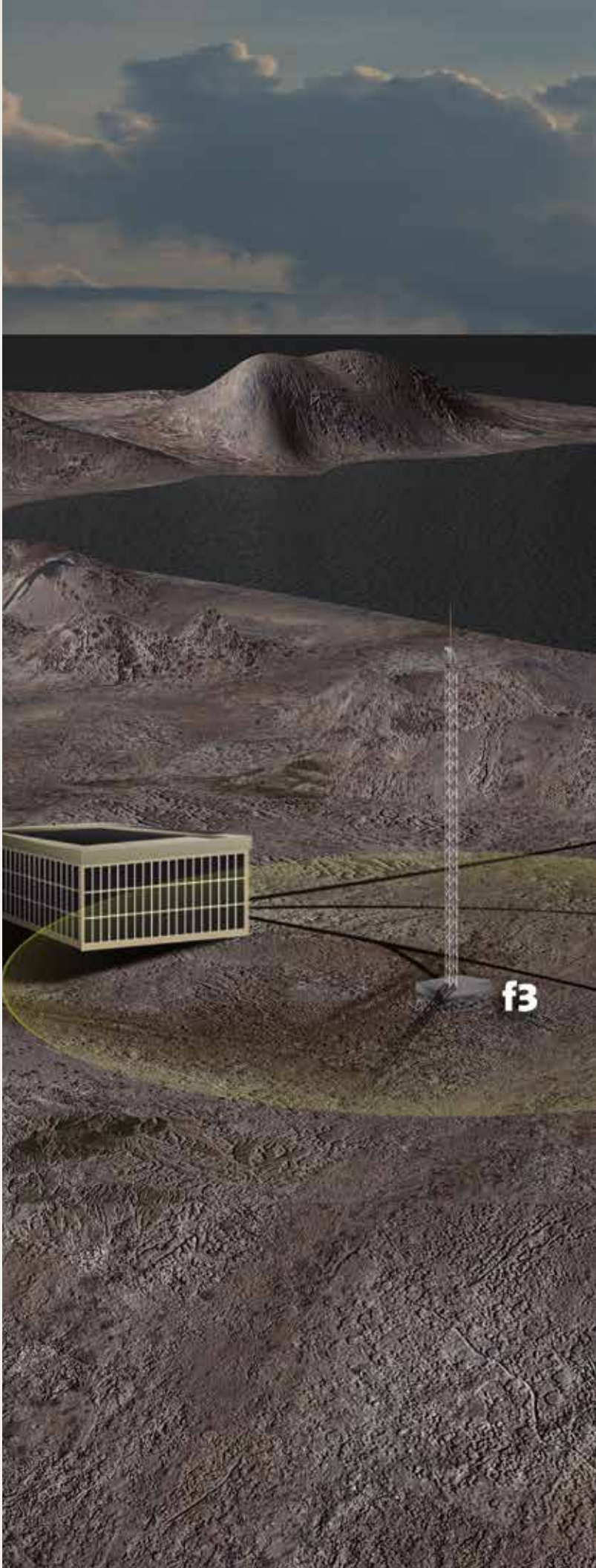
Scalability and flexibility for efficient evaluation of new solutions and tactics.

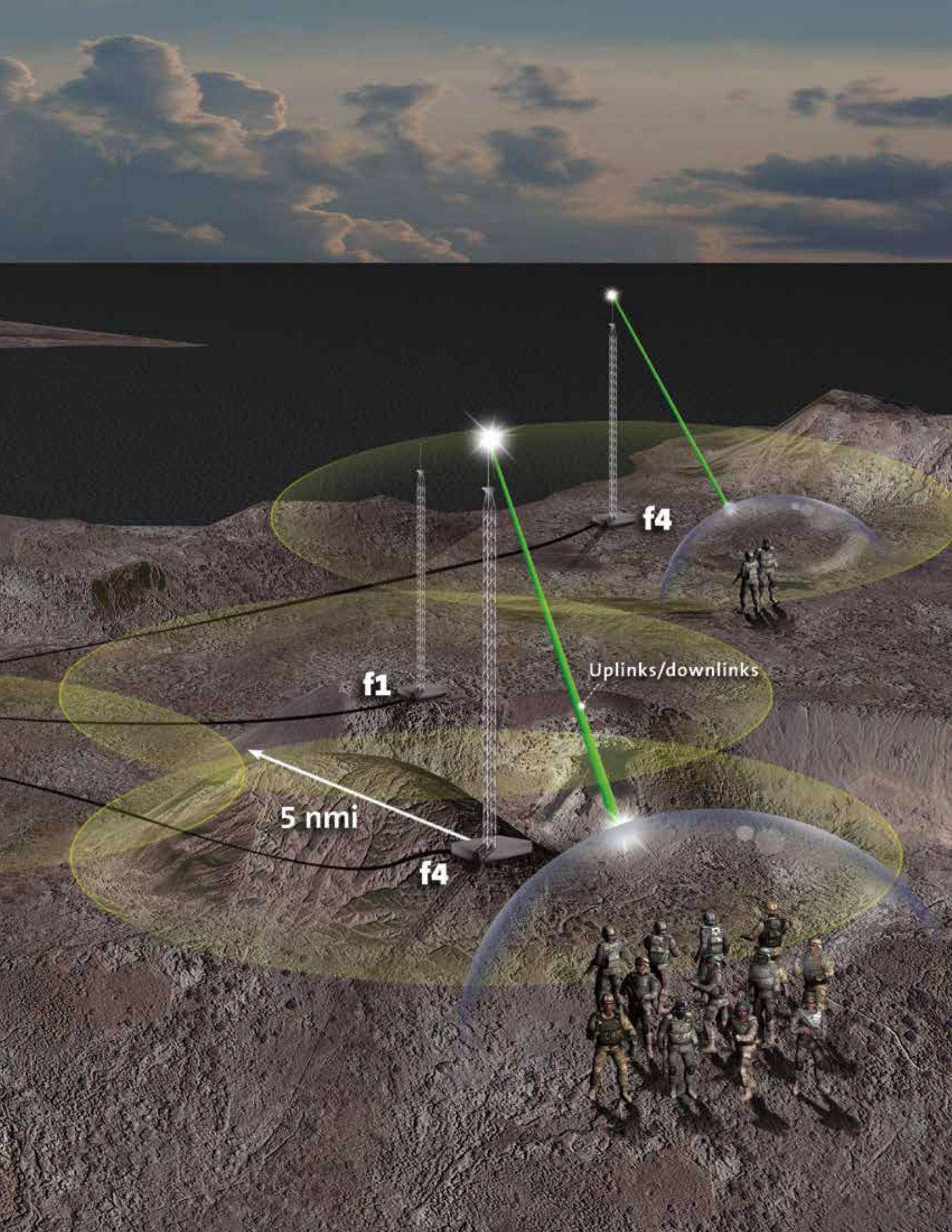
Because CRIIS is scalable in performance, number and type of users, a mission can be planned to include any mixture of participant types. This ensures the realistic testing of complex and interactive systems more efficiently and effectively so next-generation solutions and tactics can be deployed with a higher degree of confidence.

All CRIIS participant package configurations, from the dismounted soldier, to low-dynamic vehicle, to high-dynamic aircraft, are interoperable on a single range. Positional accuracy scales from less than 1 meter for the soldier to less than 50 cm for the aircraft are achievable with greater reliability – even during high dynamic maneuvers.

The data link frequencies are selectable to minimize interference between mission participants. Many of the CRIIS components are modular and common between participant packages, and even with the ground subsystem. For example, the internal components of the pod and internal mount configurations are identical, to reduce logistic burden and enhance the ability to deal with obsolescence.

The open, flexible architecture required for this high level of modularity and scalability has been designed into CRIIS from the start. Future upgrades are more easily accomplished as new systems with advanced capabilities are developed. CRIIS is not just the ideal range solution for today, but it's created to be ready for evolving range needs for decades to come.

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Uplinks/downlinks
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Building trust every day.

Rockwell Collins delivers smart communication and aviation electronic solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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