



IMMERSE

Integrated Modern Modular EW / RF System-of-systems Environment

Leveraging SPECTRE and Agile Forge Architecture

IMMERSE produces an integrated life-cycle affordable programmable RF grey space capability to support immediate development test needs that can scale in the future with funding and integrate with the future Multi-Domain Operations (MDO) test range.

Software Programmable EW & CEMA Threat Representative Environment (SPECTRE) Enhancement and Integration

- Front-End / Back-End developed providing remote operation to multiple hardware Back-Ends from a single common interface
- Cyber compliance developed from inception in coordination with range
- Creates complex waveforms via software defined radio (SDR)
- Transmits from 30 MHz - 18 GHz with up to 100 MHz Bandwidth
- Maximum linear output power: ranges from 30 to 100 Watts

COTS Electronic Intelligence (ELINT): Integrated Record, Analyze, and Playback System (IRAPS)

- Develop remote operation for waveform acquisition and analysis and future signal transmission
- Records up to 1 GHz instantaneous bandwidth ranged over 2 Hz to 43 GHz

Harmonic Suppression System (HSS) / Stratomist Integration

- Modified SPECTRE Front End and Back-End for similar control elements
- Tailored to legacy hardware (Stratomist) and enhanced for greater power and cleaner transmit signal
- Transmits from 20 MHz - 6 GHz
- Linear output power: up to 50 Watts

TBCF Stack Integration

- Threat Systems Management Office (TSMO) threat interoperability

Electronic Attack (EA) Effects integration with TSMO threat emitters

- Integrate with TBCF for remote control and monitoring of effects

Consolidates range data and system



Build Copy, Extend Capabilities, and Integrate

SPECTRE - Node [qty:1(th)-2(ob)]

Transmitting:
Red Force Representative*
Signals & Blue & Grey As-Needed

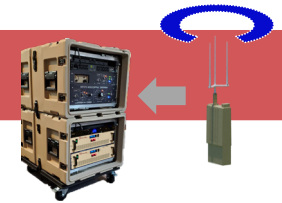


Integrate Existing

HSS / Stratomist Node

[qty:2(th)-4(ob)]

Transmitting:Blue Force Comms Signals

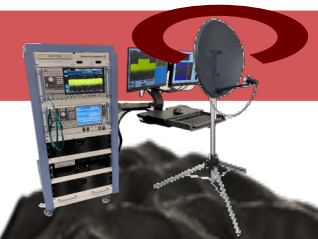


Integrate

COTS ELINT

[qty:1(th)-2(ob)]

Transmitting:
Red Force ELINT



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Proposed End State

- Dense Complex Realistic RF Environment over Limited Geographic Size Test Area
- Overall Bandwidth: 20MHz - 18GHz
- Centrally Controlled and Monitored
- Affordable Life-Cycle Costs
- Cybersecure with DevSecOps Pipeline

- Tailorable to Mission Need
- Interoperable with Other Range Systems
- Validated Threat Integration via TBCF
- MDO Test Bed Interoperability
- EA Effects / Real Time Casualty Assessment (RTCA)

