SDA Capability Roadmap
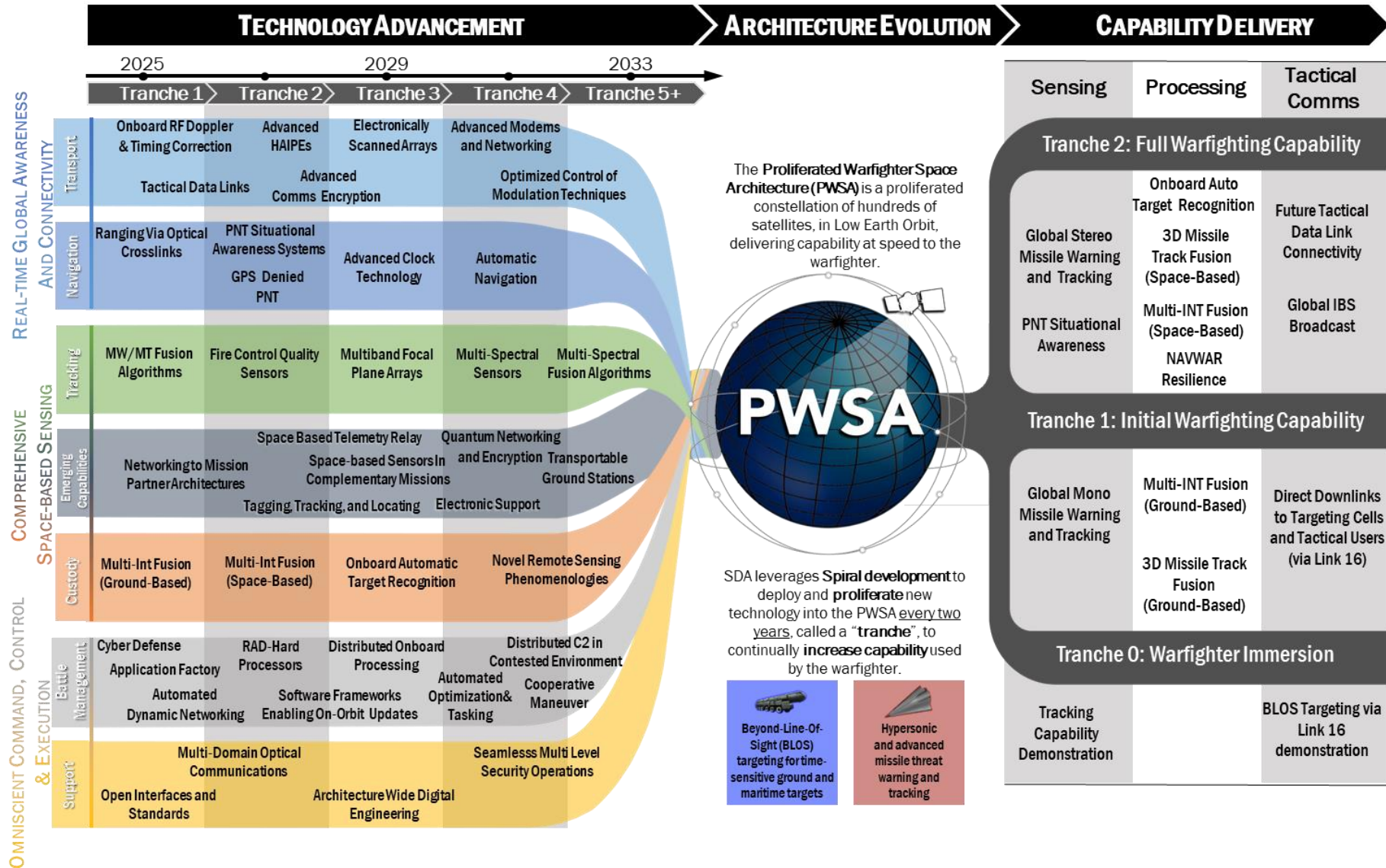
SDA Capability Roadmap

The SDA Technology Roadmap outlines the envisioned technological progress and architectural evolution of the Proliferated Warfighter Space Architecture (PWSA). Driven by the needs of the warfighter, the technology roadmap is a living document that highlights some of the key technologies guiding the development of and increasing the capability delivered by the PWSA. The roadmap also demonstrates SDA's commitment to innovation, acknowledging the importance of emerging technologies such as in secure networking, adaptable radio frequency systems, and optical communications terminals in the future deployment of space-based capabilities for national defense purposes.

SDA uses spiral development to deploy and proliferate new technology into the PWSA every two years, in what are called "tranches". In doing so, SDA will continually evolve the architecture, increasing the capability delivered into the hands of the warfighter. At a high level, SDA is interested in technologies that fall into three focus areas, each aligned with a capability layer:

- **The Global Awareness and Connectivity** focus area features technologies enabling global access to low-latency data transport, communications, and navigation information for joint warfighters and warfighting systems.

- **The Comprehensive Space-based Sensing** focus area features technologies to enable operationally relevant detection, tracking, targeting, custody, and kill/battle damage assessment (BDA) of adversary systems spanning multiple domains, with an emphasis on advanced missile threats and time-critical land and maritime targets. In addition, this topic spans the range of emerging capabilities and possible complementary missions with space-based sensors, including space-based environmental monitoring (SBEM), space domain awareness, and BDA.

- **The Omniscient Command, Control and Execution** focus area is aligned primarily with the battle management and support capability layers and includes algorithms, frameworks, and hardware supporting advanced processing, command and control, user interface/interaction/experience, and seamless interoperability of architecture elements.

For each of the above focus areas, and corresponding capability layers, the roadmap lists some of the technologies SDA is interested in for implementation in future tranches of the PWSA. The roadmap is not intended to provide a comprehensive list of these technologies and will continue to evolve over time in response to expressed warfighter needs.

An additional purpose of the technology roadmap is to encourage collaboration and innovation from potential partners across government, academia and industry (including small businesses, non-traditional defense contractors, and new space) who wish to participate in and contribute to the SDA mission. Prospective partners can examine the roadmap and browse the SDA capability layer pages, to gain a better understanding of our current technological interests. SDA is committed to pursuing technologies that not only increase capability, but continue to drive down the size, weight, power, and cost, which enables the PWSA to continue to maximize affordability, deliver capability and harness the power of commercial industry to the benefit of the warfighter.

For more information about the agency, employment, and competitive opportunities, visit us at SDA.mil, on LinkedIn, or X @SemperCitiusSDA

UNCLASSIFIED