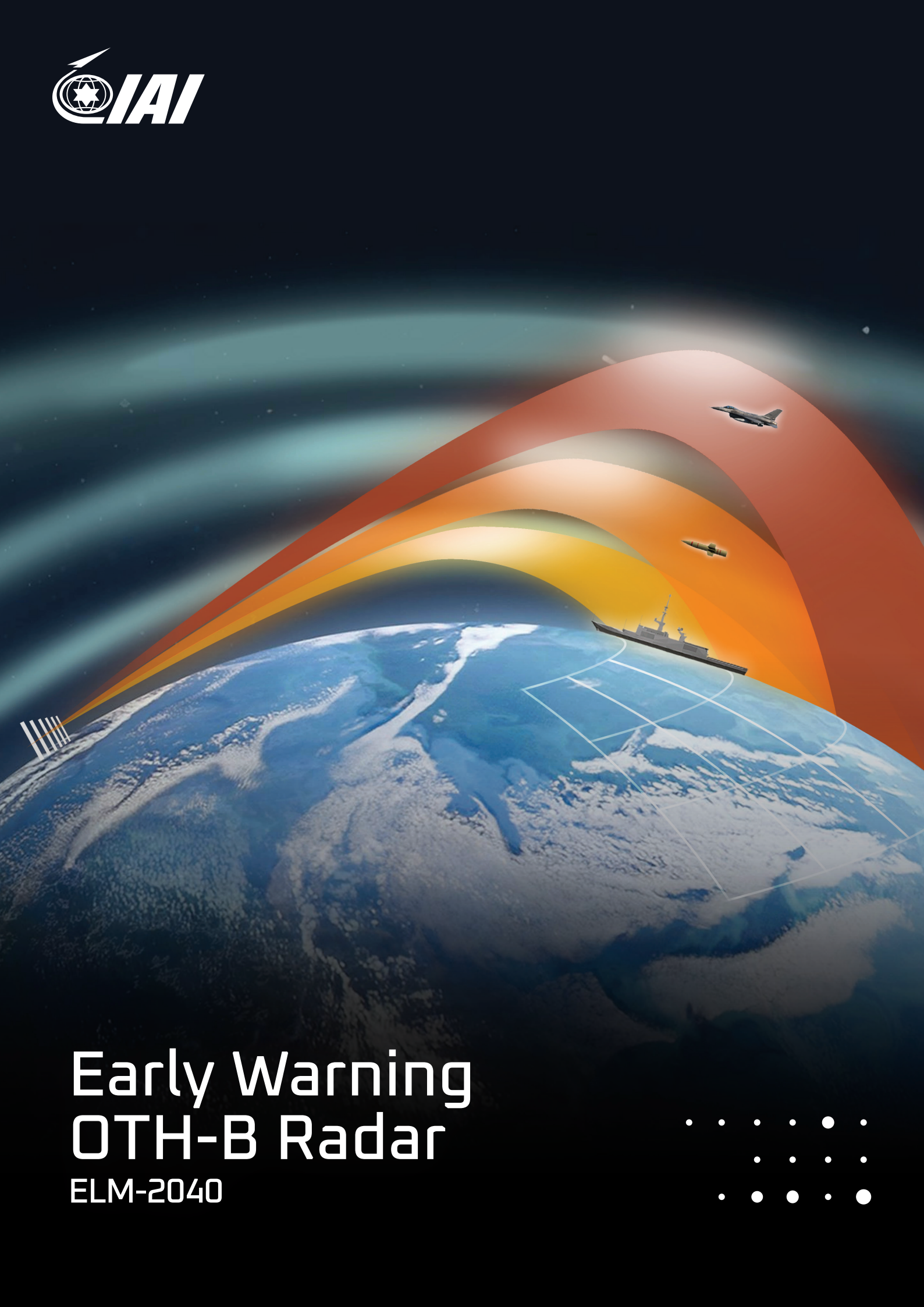

Early Warning OTH-B Radar

ELM-2040

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The OTH-B Early Warning Radar (ELM-2040) is a state of the art backscatter radar system that performs early warning, tracking, and cueing of long-range ballistic, cruise, and hypersonic missiles, as well as Air Breathing Targets (ABT) and Sea Surface Targets - all at distances of thousands of kilometers. Operating in High-Frequency (3-30 MHz), OTH-B employs digital AESA technology and sky wave over-the-horizon (OTH) techniques developed by ELTA over decades of experience in the design and development of air defense radars.

OTH-B transmits a directional electronically steered radio beam at the sky, where it is bounced off the ionosphere toward the surface and then step-scanned across a sector at long ranges. Targets reflect the radar energy, bouncing it back to the ionosphere where it is picked up by the system's receiving antennas. The transmitting RF waves can achieve very long distances, up to thousands of kilometers, through sky wave hop-propagation. Moreover, the radar transmits a repetitive linear frequency modulated continuous waveform (FMCW) thereby optimizing on the transmission output.

The ability to detect threats at such long distances significantly improves the warning time. While most early warning systems are unable to detect low flying hypersonic missiles until they reach the horizon, OTH-B is able to detect them well before. In addition, OTH-B even offers advantages over existing satellites since they can only detect a missile launch but cannot track its glide/hypersonic cruise phase.

Utilizing the latest advancements in digital signal processing power, ELTA developed advanced algorithms to suppress noise and interference, and improve accuracy and target classification, thus transforming OTH-B technology into a viable and reliable working solution. The system is able to perform autonomous search of up to a 180° azimuth sector with multiple tracking functions: track while search, dedicated full track, and multiple simultaneous target tracking.

In addition, OTH-B offers a close range air defense configuration, which enables the detection and tracking of low flying targets obscured by mountains or other objects blocking the line of site.

HIGHLIGHTS

- Autonomous detection:
  - Detection of low targets over the horizon
  - Ranges of up to thousands of kilometers
  - Wide and flexible angular coverage
- Interoperability with a nation's Air Defense System
- Multi-Purpose:
  - Early-Warning for all target types Wide-Area Air Surveillance of aircrafts & low flying targets
  - Maritime Surveillance
- Air Defense configuration mode detects and tracks low flying objects obscured by terrain up to hundreds of kilometers

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