

DHS SCIENCE AND TECHNOLOGY

International Collaboration in Support of Test and Evaluation ITEA T&E Symposium 2017



**Homeland
Security**

Science and Technology

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Gregory Simmons

Deputy Director

Office of Test and Evaluation

Science and Technology Directorate

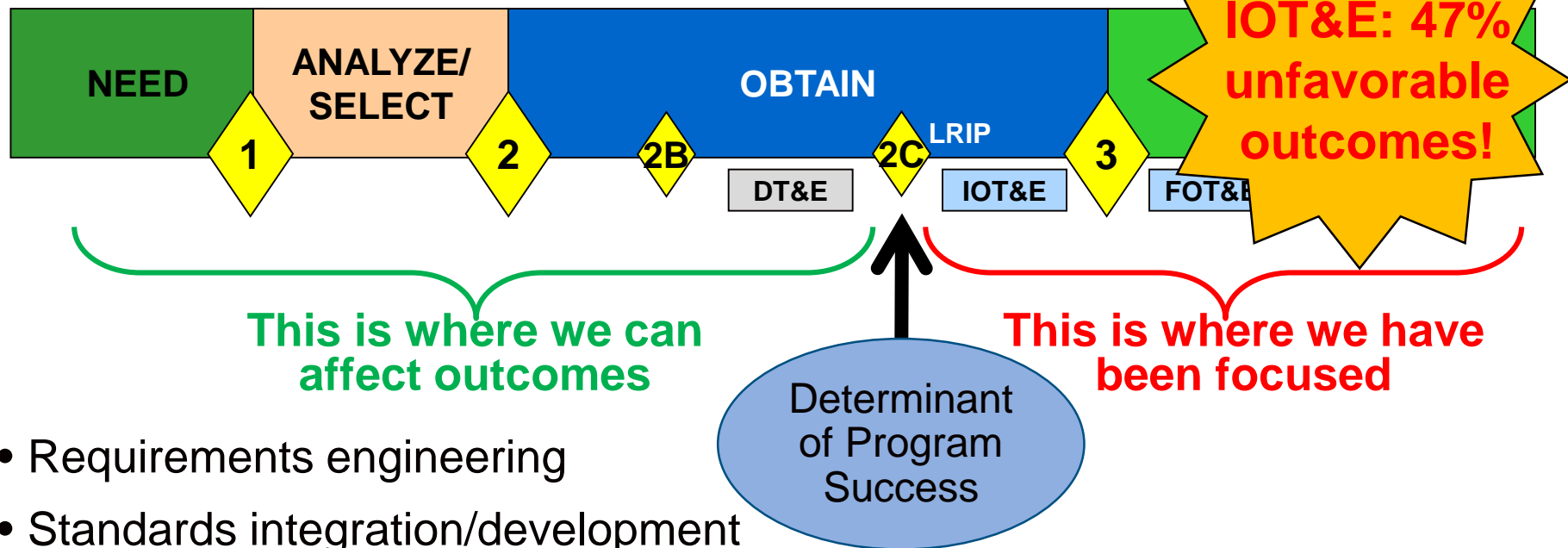
Background

- US Coast Guard Heavy Icebreaker
 - Polar Star, commissioned 1976, active.
 - Lockheed Shipyard (closed 1988)
 - Polar Sea, commissioned 1977, inactive.
- Polar Ice Breaker Acquisition Program
 - DHS Major Acquisition Level 1 Program
- On 1 Sept 2015, President Obama announces that acquisition of a heavy Icebreakers will be accelerated by 2 years to replace aging Ice Breaker Fleet
- Challenge for T&E: How can we help this program be successful?
 - Lack of industrial base has created a dearth of US icebreaker expertise in all facets of design, T&E, M&S, and lessons learned.
 - Early Test and Evaluation buys down risk



Shift Left!

DHS Acquisition Lifecycle Framework



- Requirements engineering
- Standards integration/development
- Early identification *and remediation* of technical risks and key failure modes
 - Performance: at scale and under load
 - Reliability: throughout the operational envelope
 - Interoperability: exchange data in support of the mission
 - Cybersecurity: operational resilience in contested cyber domain

Shift Left to *set the conditions* for a favorable outcome

The Ice Lab

- S&T led an information exchange visit to the National Research Center, Canada, Ice Lab in St John's, Newfoundland, on 16 June 2016. USCG attended.
- USCG determined that partnering with the Ice Lab would facilitate hull design testing in support of the President's direction.
- Leveraging an existing S&T CAA with DRDC Canada, a new technical annex between S&T, Coast Guard, NRC Canada, and US Navy was staffed and signed in 90 days



Model Build

- NRC built models ordered to test government designs concepts.
- Data from tests will support Coast Guard Acquisition decision in FY18
- Ice tank testing was completed in July 2018

