53d Wing

Perfecting Lethality

Comprehensive Approach to Capability Delivery
"Deep-End" Theory

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53 TMG Commander

This Briefing is:
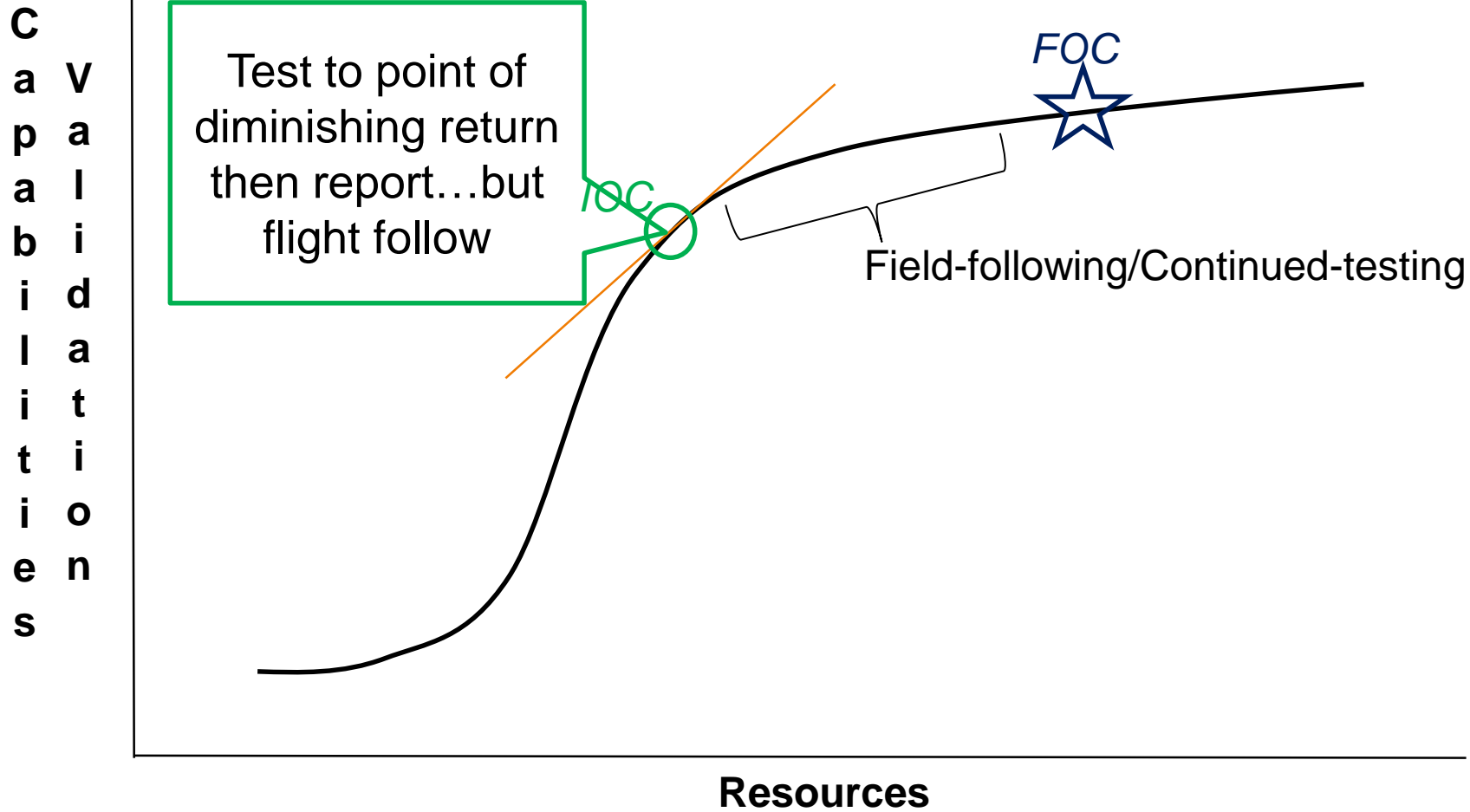**UNCLASSIFIED**

Overview

- Points to Ponder

- Test Overview—Integrated Test Management & Deep-End

- Strategies to Meet the Pace of Need
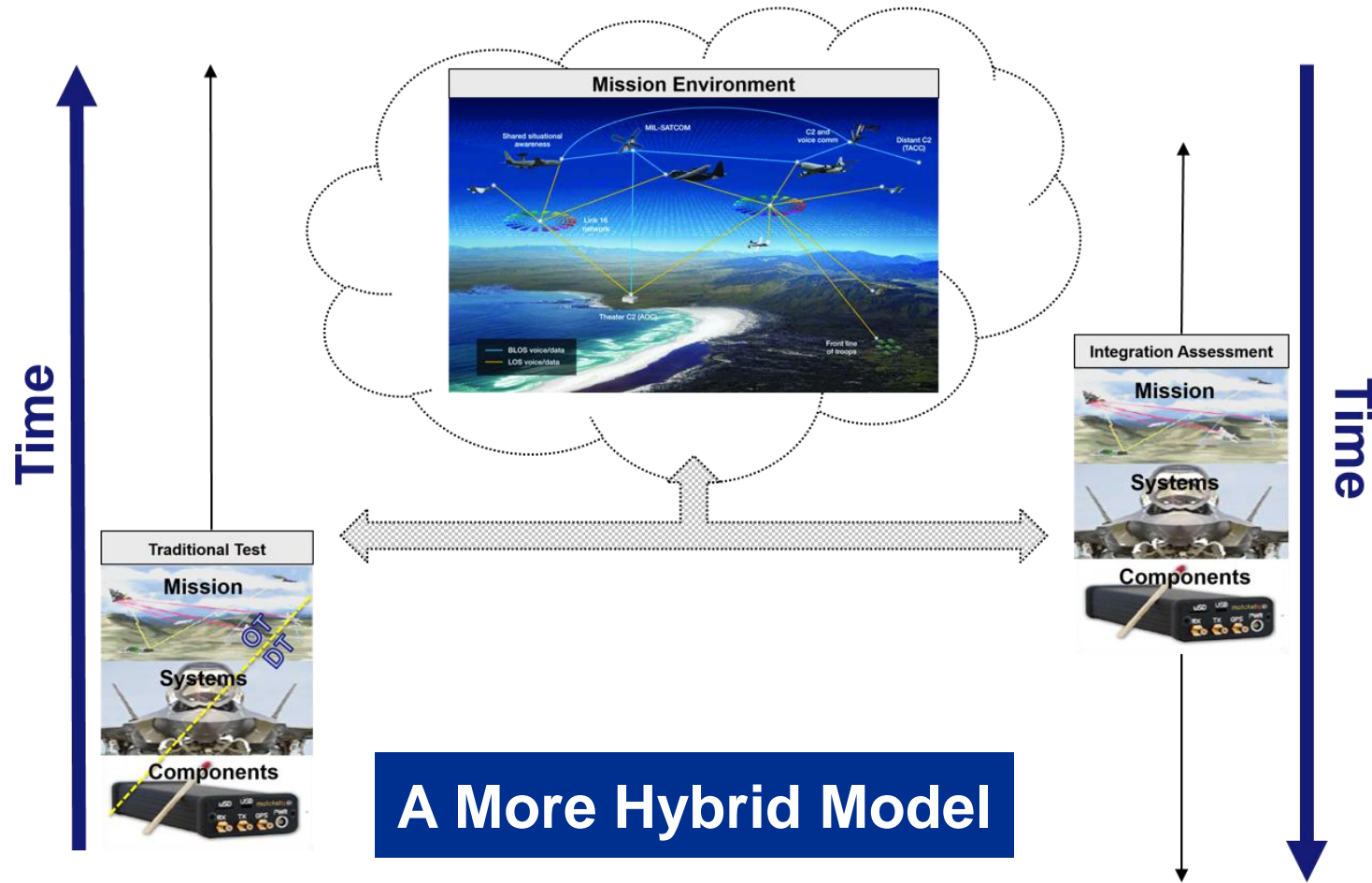
"Deep-End" Theory

- Comprehensive Approach to Capability Delivery

- Measure performance to end-state desires vice specification compliance[*]

- Integrated Test Management strategy with Big-Data repository

Capabilities Validation (y-axis)

Resources (x-axis)

Test to point of diminishing return then report…but flight follow

IOC

FOC

Field-following/Continued-testing

Refining Test Approach

Time

Time

Mission Environment

Shared situational awareness · MIL-SATCOM · C2 and voice comm · Distant C2 (TACC)

Link 16 network

Theater C2 (AOC)

Front line of troops

BLOS voice/data
LOS voice/data

Integration Assessment

Mission

Systems

Components

Traditional Test

Mission OT DT

Systems
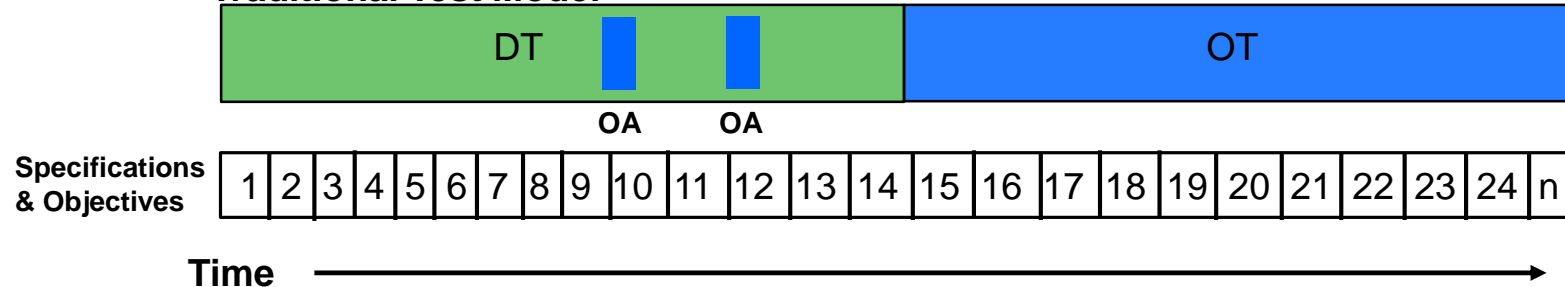
Components

A More Hybrid Model

Traditional Test, Coupled with an Integrated Assessment Phase having a Multi-Domain Mission Environment Focus

Integrated/Hybrid T&E

Traditional Test Model

DT	OT

OA   OA

Specifications & Objectives

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	n

Time →

Linear Logic Testing: Testing specification compliance from 1 item to the next to prove the system " can"

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Integrated/Hybrid Test Model

DT	Integrated Test	OT

★ **Airworthiness/Stability**   ★ **OT Certification**
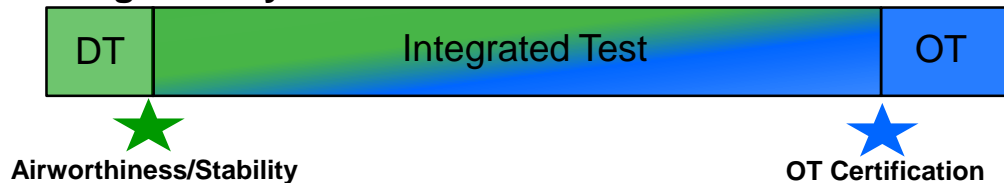
"Deep End" Testing

①	2	③	4	⑤
6	⑦	8	⑨	10
⑪	⑫	13	⑭	⑮
16	17	⑱	19	20
㉑	22	23	㉔	ⓝ

Integrated/Hybrid testing allows mutual data collection against multiple objectives using exposure to more complex multi-domain environments than present in traditional DT. Sustained OT early involvement helps achieve desired end state performance sooner. Mission critical limitations identified in this "Deep End" environment can be addressed via concentrated effort to correct serious deficiencies prior to dedicated OT/deployment. Concept is the inverse of the traditional philosophy by showing what the system "can't" do.

Notional Agile-like Depiction

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🛦🛦🛦 Tactics, Test,
🛦🛦🛦 Integration,
🛦🛦🛦

1

🛦🛦🛦 OTA
🛦🛦🛦 Support
🛦🛦🛦

Template
0 Fielded
1 OTA OT
2 Early Involvement
3 Successive OFP
⬚ Planning
⭐ OTA Execution Completion
🟩 Traditional DT ⎤
🟦 Traditional OT ⎦ **Integrated Test**
▬ Tactics & Field Following
🛦 Weapons Integration
🛦 **Unfunded**

2

🛦🛦🛦 Early
🛦🛦🛦 Involvement

3
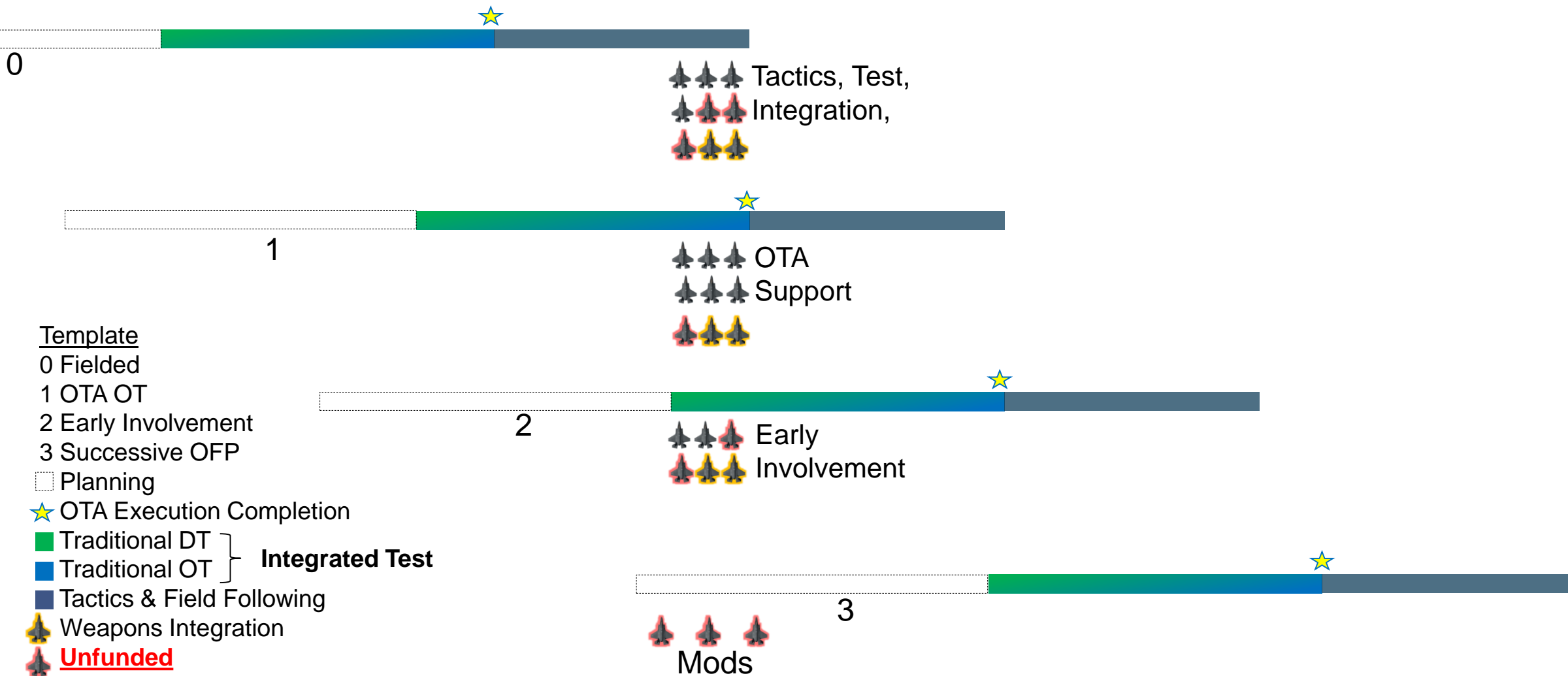
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Mods

- Leverage all things that can help field competent capability at the pace of need
  - M&S, acceptance testing, test, tech order development, field, <u>acquisition strategy</u>, etc.

- Top-down assessment to determine "**cannots**" in Multi-Domain, integrated, validated environments → Look forward…not backward…
  - Inverse strategy to use mission environment shortfalls first to focus test

- Data-mine to solve or discover unknown-unknowns

- Software-defined systems can be upgraded rapidly
  - Mission planning, EW, Cyber, M&S considerations

- We need to adapt how we develop and deliver capabilities, TTP, and training…faster, smarter, & better