Challenges and Opportunities for Process Excellence in the TYBRIN-TARIF Government-Embedded Contractor Team

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Overview

- **Organizational profiles**
  - Who is TYBRIN and who is TARIF?
- **The major challenge**
- **Approach taken at TARIF**
  - What we did and why
- **Answers to the panel questions**

Who is TYBRIN Corporation?

Fort Walton Beach, Florida

Corporate Profile:
- Founded in 1972
- 1,000 employees
- 104 locations
- 18 overseas locations

Supporting:
- System engineering
- Software engineering
- Mission planning
- Test and evaluation
- C4I
- Acquisition
- Range safety
- Information technology
- Special Operations / Intelligence

Customers:
- AAC
- AFMC
- AFSOC
- AFFTC
- OO/ALC
- SSG
- Air Force Space Command
- NASA Goddard Space Flight Center
- Kennedy Space Center
- ASC
- NAWCWPNS
- USASMDC
- ESC
- AFRL
- DFAS

TYBRIN CMMI Efforts

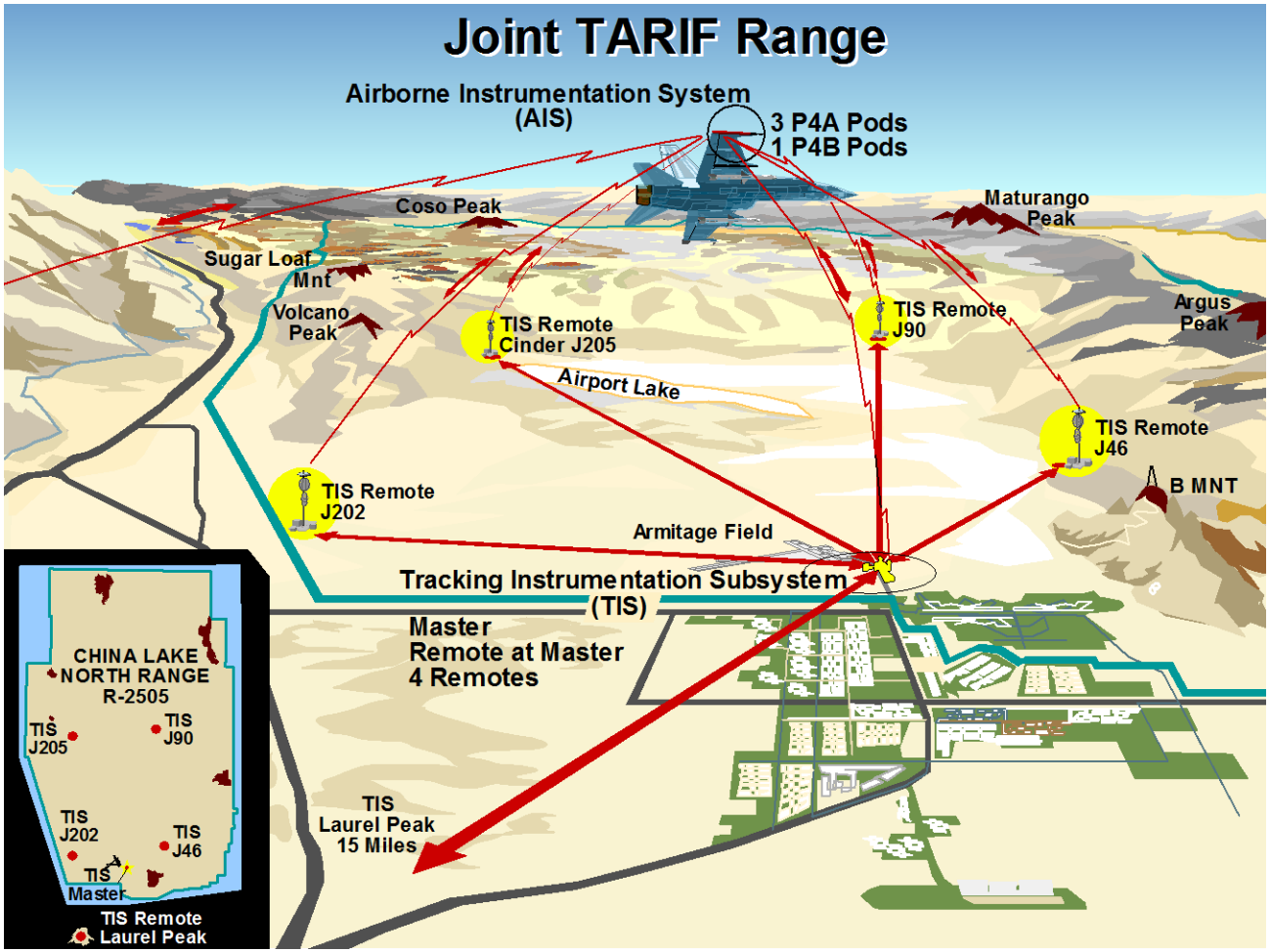
- Started its CMM efforts in 1993
- Achieved a CMM Level 2 rating in 1995
- Independently certified at CMM Level 3 in 1997, 1999, and 2001
- Significant progress towards achieving CMM Level 4
- Currently transitioning to the CMMI-SE/SW
- 28 software teams on 11 commercial and Government contracts using our standard processes

Supporting the Warfighter: Tactical Air Ranges Integration Facility

Naval Air Weapons Station

China Lake, CA

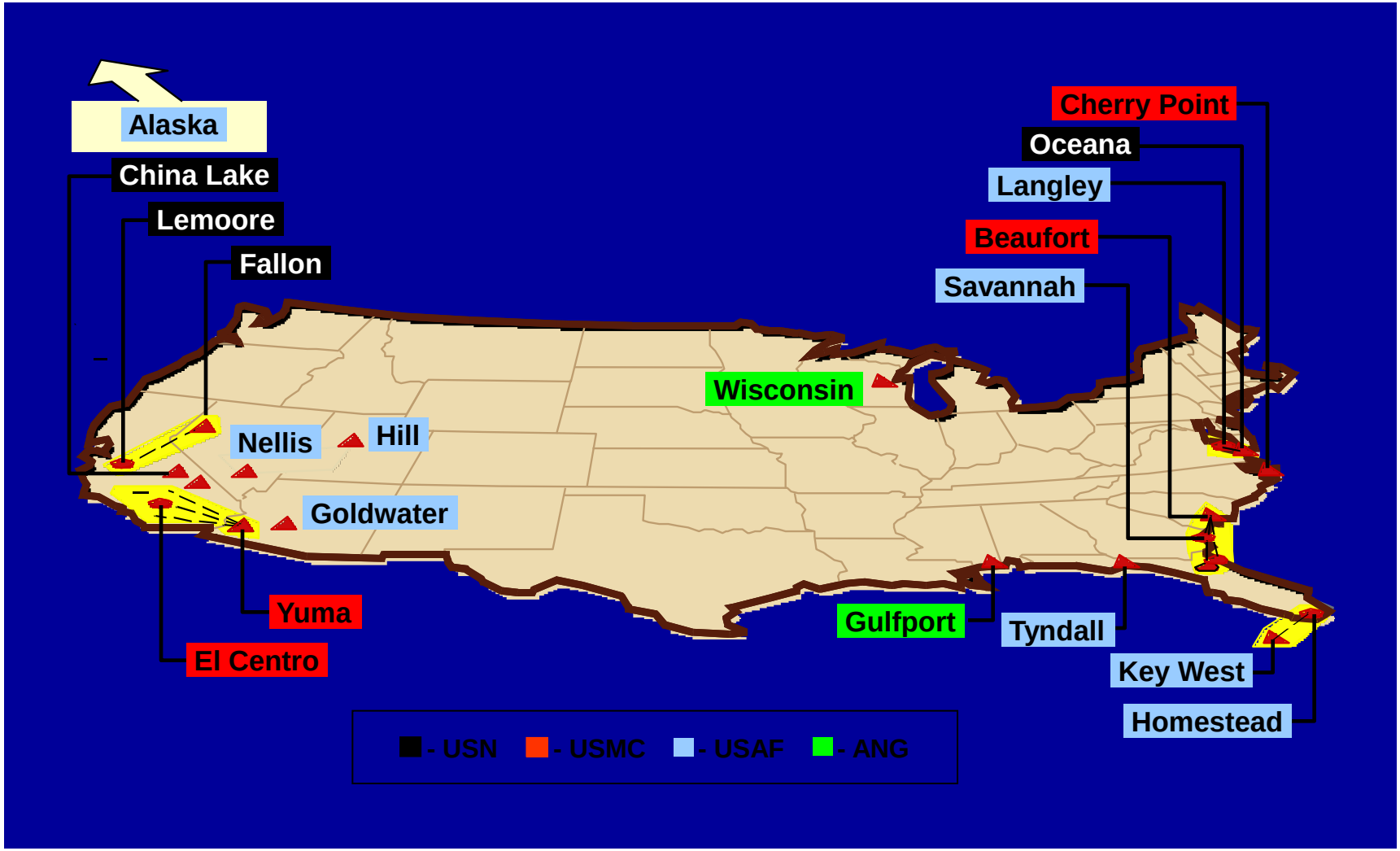
TARIF Supports Tactical Aircrew Training



SSA:
Navy
TACTS
Air Force
ACTS

Aircrew
Debriefing
System

Our Customers: TACTS/ACTS Ranges



TARIF Organization Profile

- **Primary software product – Control and Computation Subsystem (CCS)**
  - Evolved over the last 30 years
  - 250K lines of Fortran and C++ code on a PC
  - Plus a couple of smaller products we've developed
- **The development team**
  - A mix of a dozen TYBRIN engineers, three Government engineers, and a couple of contract software engineers
  - Mostly are very senior engineers who are domain experts, with the core team having been together for over ten years
  - Project management is done by both sides

TARIF Process Improvement History

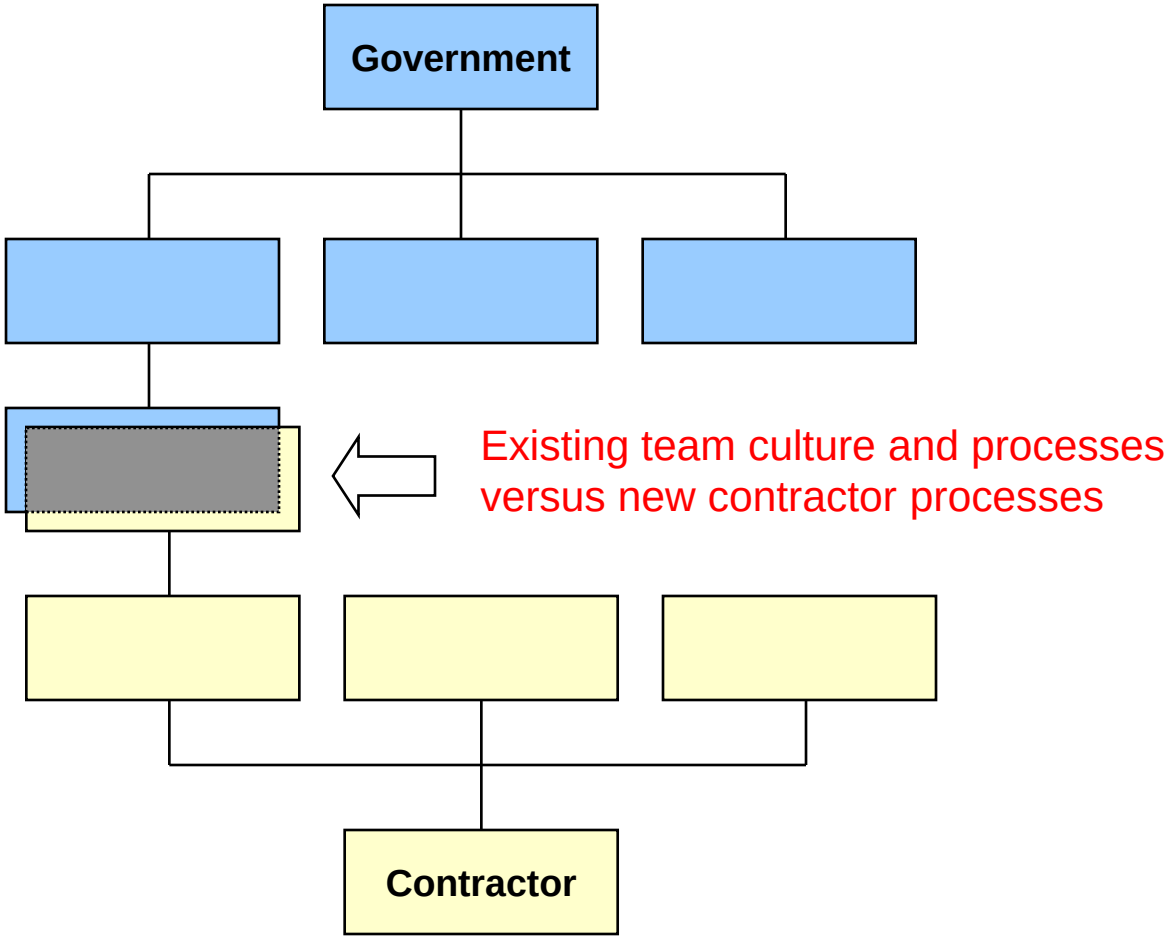
- **TARIF has a long history of process improvement**
- **Progress has been continual, but necessarily slow due to system complexity and high work loads**
- **Four acceleration factors**
  - TARIF management is committed to this CMMI effort
  - TYBRIN's proposal for this contract included a commitment to help get the TARIF to CMMI level 3
  - Brought in Natural SPI as CMMI consultants
  - A process improvement lead was appointed

Disclaimers

Personal Disclaimer: The views expressed in this presentation are those of the author and do not necessarily represent the views of either TYBRIN or the Government.

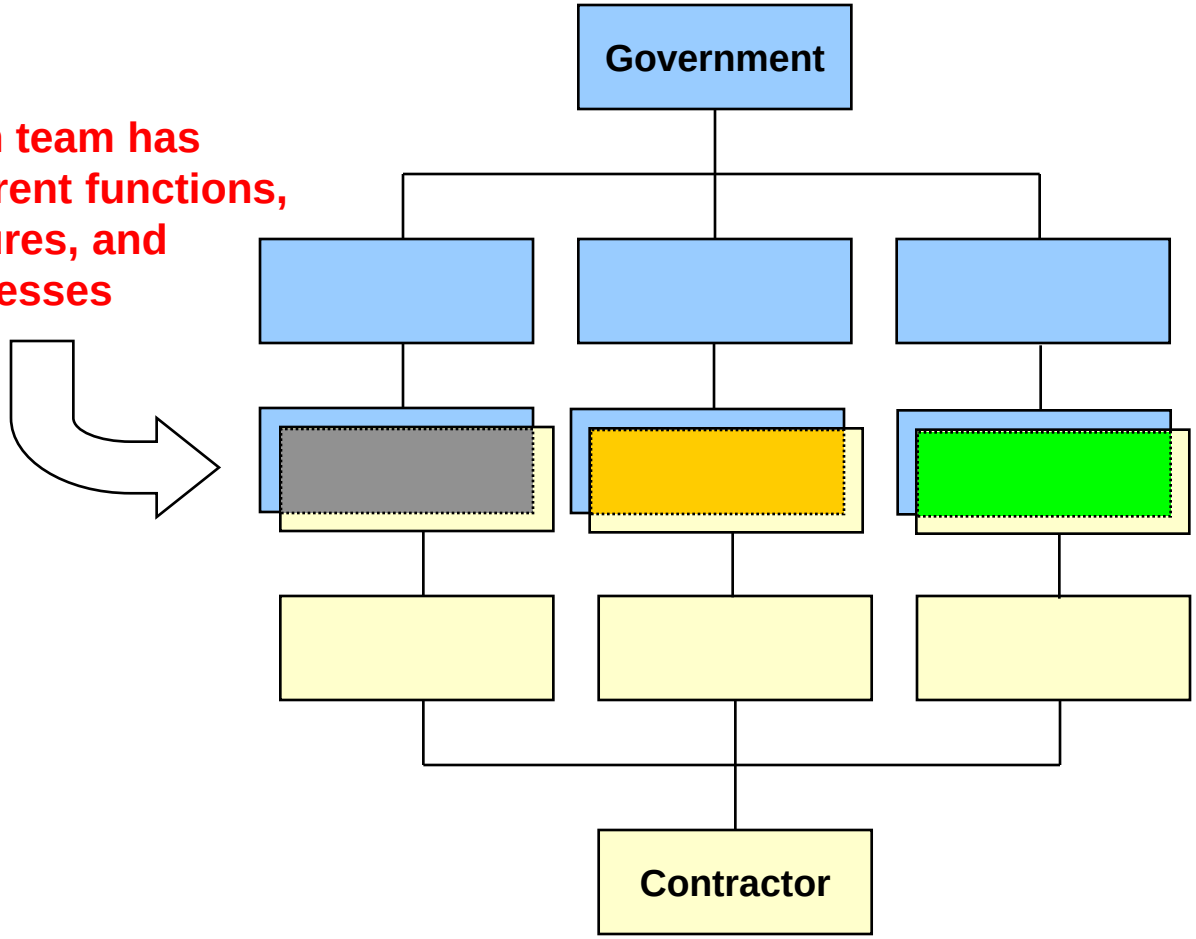
Process Disclaimer: The processes expressed in this CMMI effort are those of the TARIF Team and do not necessarily represent the views of either TYBRIN or the Government.

The Team Culture Clash



The Program Culture Clash

Each team has different functions, cultures, and processes



Approach Taken

- Gently merge the cultures
- Use as many existing processes and artifacts as possible
- Where processes are missing, start with the contractor processes, but tailor them as necessary to fit the culture
- Since many teams across the company are tailoring their processes, coordinate these efforts, and cross-pollinate
- Like a marriage, it takes a commitment from both sides to make it work

Approach Taken - Continued

- **Start with the organization's business goals and develop the appropriate processes to accomplish them**
- **Plan the effort as a project**
- **Prioritized the requirements**
- **Staff the effort with the right level and type of resources**
  - On site, part-time process improvement project manager
  - On site and off site support by part-time consultants

General Panel Questions

1. **What are your top three challenges in achieving process excellence in Government-embedded contractor teams? Culture, commitment, and cooperation**
2. **What do you view as the opportunities for process excellence with such teams?**
   - **Cooperatively developing processes that meet the organization's business goals**
   - **Inheriting existing processes and artifacts**
   - **Taking local ownership of the processes**

Specific Panel Questions (1)

1. **What is the strategy for deciding whose processes will be used with Government-Embedded Contractor Teams?**

   a. Is the relative maturity of Government vs. contractor processes assessed, and if so, how? **This is often obvious.**

   b. What factors, if any, other than process maturity enter into the process selection decision? **Which process best fits the culture and the needs of the organization.**

   c. Does the more mature process always win? If not, why not? **Not if it doesn't "fit" the culture.**

Specific Panel Questions (2)

2. **How is it ensured that the Team consistently and effectively executes the selected processes?**
   a. Is the Team provided process orientation and training? **Yes, as we develop each "common" processes.**
   b. How is buy-in for the Team processes achieved? **Through consensus among the management and engineering teams.**
   c. Is there a combined Government-Contractor Engineering Process Group (EPG) that is used to control Team processes? **Yes, a pre-existing System Eng. Group**
   d. Are both Government and contractor team members audited for process compliance, and if so, by whom? **QA**

Specific Panel Questions (3)

3. Is continuous process improvement supported, and if so, how?

a. How are contractor-suggested process changes handled? How well are they received? **Everyone is encouraged to suggest changes, and each is considered for adoption based on its merit.**

b. If there is a Team EPG, can it react quickly to needed process changes? **We meet bi-weekly and can expedite updates through e-mail voting.**

c. How agile is Government management (including, if appropriate, the Contracting Officer) in reacting to proposed process changes? **Quick for internal changes, longer for contractual changes.**

TARIF-TYBRIN CMMI Contacts

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