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Architecture Considerations of Time Sensitive Targeting and NATO TST Tool

Orhan Cetinkaya, PhD
Yakup Yildirim, PhD

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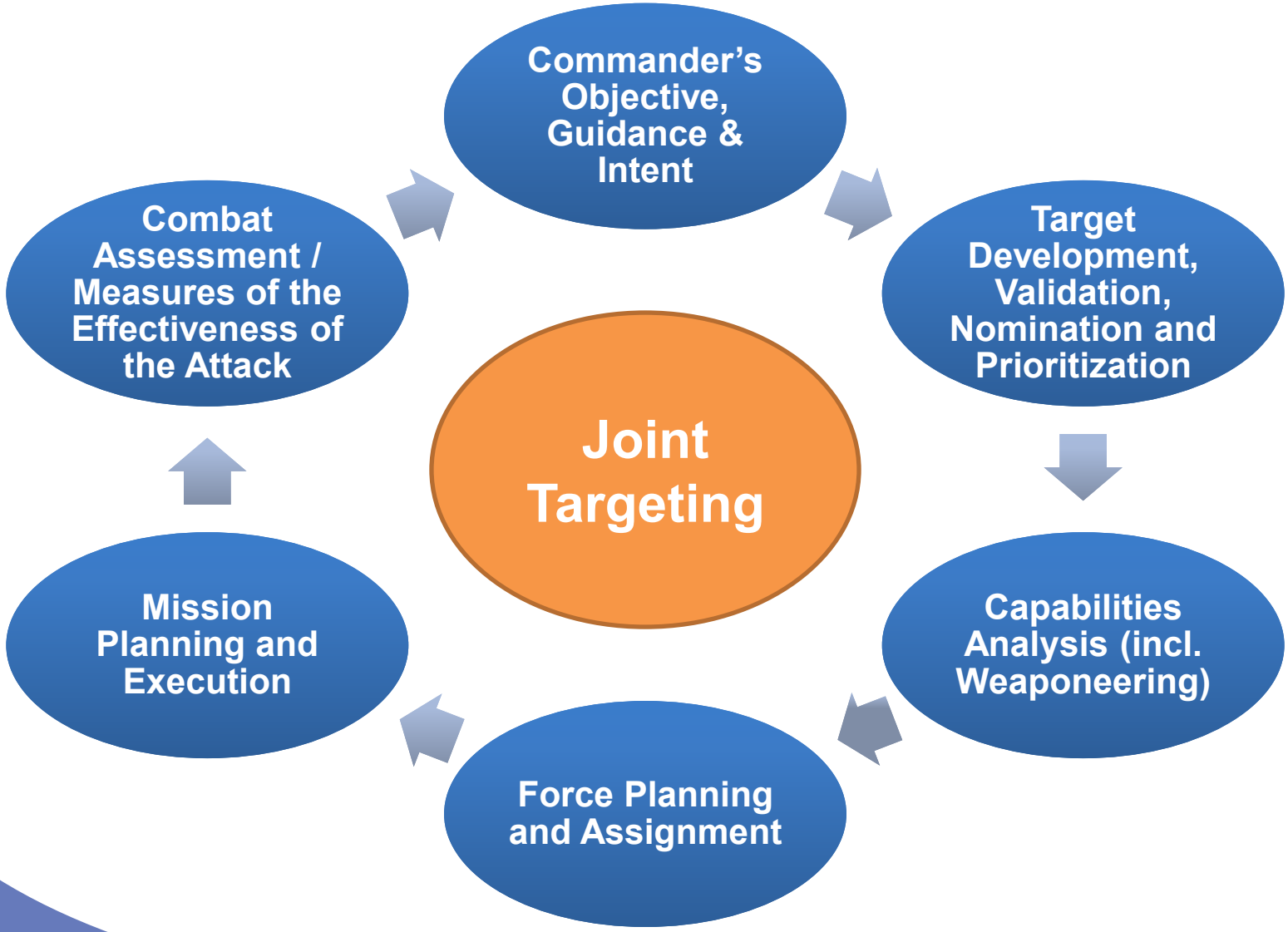
Outline

- Joint Targeting
- Time Sensitive Targeting
- TST Architecture Considerations
- NATO TST Tool

Allied Joint Targeting

- Joint Targeting is the *process* of determining the effects necessary to achieve the commander's objectives, identifying the actions necessary to achieve the desired effects based on means available, selecting and prioritizing targets, and the synchronization of fires with other military capabilities, and then assessing their cumulative effectiveness and taking remedial action if necessary. It is both an operational level and component level command function (AJP-3.9)

Joint Targeting Cycle



Time Sensitive Targets

- Time Sensitive Targets (TST) are defined as those targets requiring immediate response because they pose (or will soon pose) a danger to friendly operations or are highly lucrative, fleeting targets of opportunity. (AJP3.9, JP3-60)
- The amount of time available does not allow for the standard targeting process to be followed.
- The TST Process is a team process with predefined participants and tasks.
- Military planners spent days planning one combat strike against one fixed target. TST gives friendly forces the option of striking targets minutes after they are identified.

Targeting & TST

- Deliberate Targeting:
  - Prosecutes targets known to exist in an operational area with scheduled actions.
- Dynamic Targeting:
  - Prosecutes targets that have been identified too late, or were not selected for action in time to be included in the deliberate targeting cycle and therefore were not scheduled.

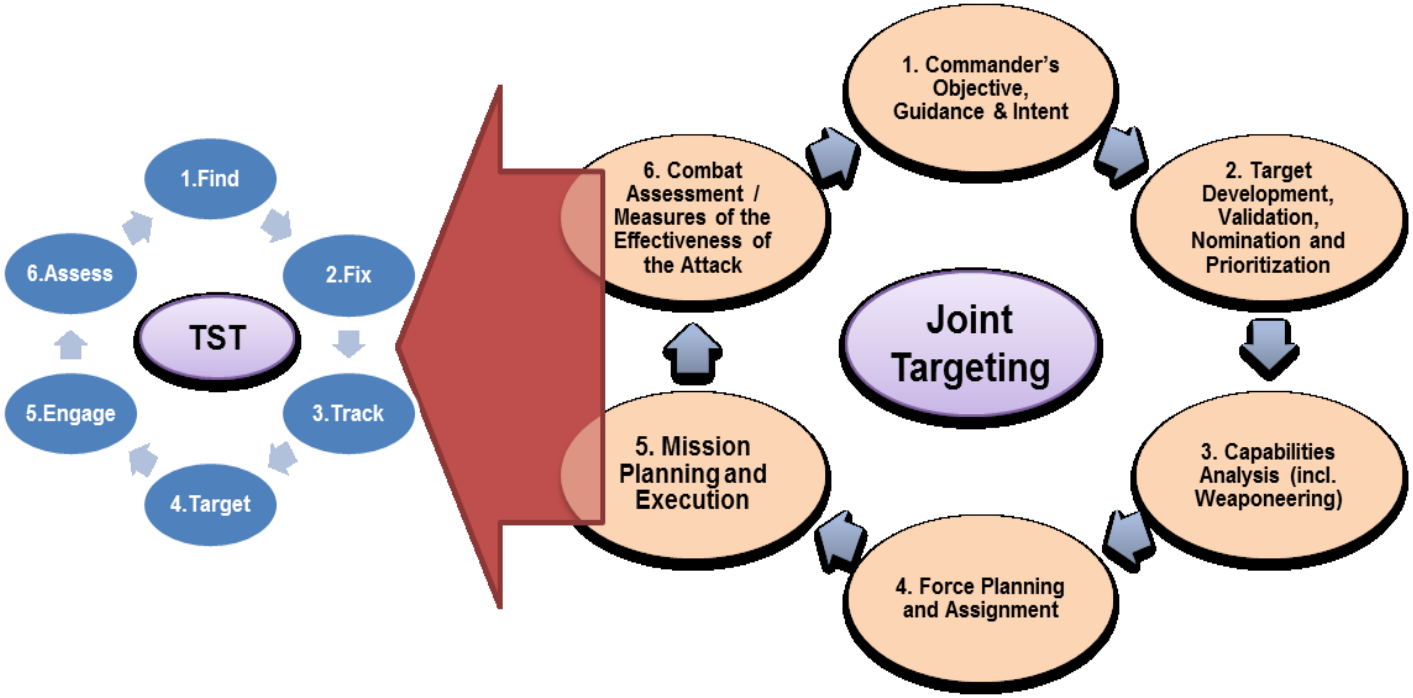
- TSTs are prosecuted using either Deliberate Targeting or Dynamic Targeting. TSTs are time sensitive, and often fleeting or emerging, they tend to be prosecuted via Dynamic Targeting.

Examples of Potential TSTs

- Mobile C2 vehicles and facilities
- Deployed theatre ballistic missiles (TBMs)
- Mobile rocket launchers (MRLs)
- Mobile high threat Surface-to-Air Missile systems (SAMs)
- Naval vessels
- Military or civilian individuals who pose a threat and demand an immediate action to neutralize
- Previously unidentified C2 nodes
- Terrorist leadership
- Mobile radio/TV broadcast stations
- Enemy SOF
- Fixed targets

Time-Sensitive Targeting

- Dynamic and Time-Sensitive Targeting is part of the Joint Targeting Cycle
- TST process occurs within the Joint Targeting Cycle (Phases 5 and 6)
- Comprised of 6 Steps



Time Sensitive Targeting Process

- Find:
  - The intelligence collection, traditional ISR (collection) and non-traditional ISR (i.e. aircraft targeting pod, radar warning receiver (RWR) indication, SOF).
- Fix:
  - Sensors identify and geo-locate a TST (typically via cross-cueing and intelligence fusing) .
- Track:
  - Sensors are prioritized and track of the TST is maintained. Tracking is a continuous process and runs from the Fix step to the successful prosecution of the target and its assessment.
- Target:
  - Restrictions including CDE, ROE, restricted/prohibited targets of the JTL or JPTL. Final approval for TST engagement is made during the target step.
- Engagement:
  - The TST engagement is transmitted to the selected engagement system. The engagement is monitored, and the output is the actual target engagement.
- Assessment:
  - The collection BDA and assessment of information about the results of the TST engagement.

TST System Architecture Considerations

- Centralized planning and decentralized execution:
  - Planning at Joint Force Command level
  - Delegated engagement authority to different units
- Coordination & collaboration by multiple participants.
  - Coordination: well-defined, structured process
  - Collaboration: unstructured process
    - To streamline the communication process, participants should communicate and collaborate with each other.
    - Communication/collaboration should be visible to all parties involved.
    - Collaboration should cover both textual and graphical (white boarding) means.

TST System Architecture Considerations

- Running over a network:
  - Participants physically located over a network.
  - Many participants who are located at multiple command levels (joint force, component command, tactical)
  - Supported to run over a wide-area network with different network bandwidth and speed limitations.
- Resistance to a single point of failure:
  - Participants can continue to operate with old stated data using other communication means (e.g. phone) in case there is no network connection
  - Participants should maintain their own system state/data and share them with others.

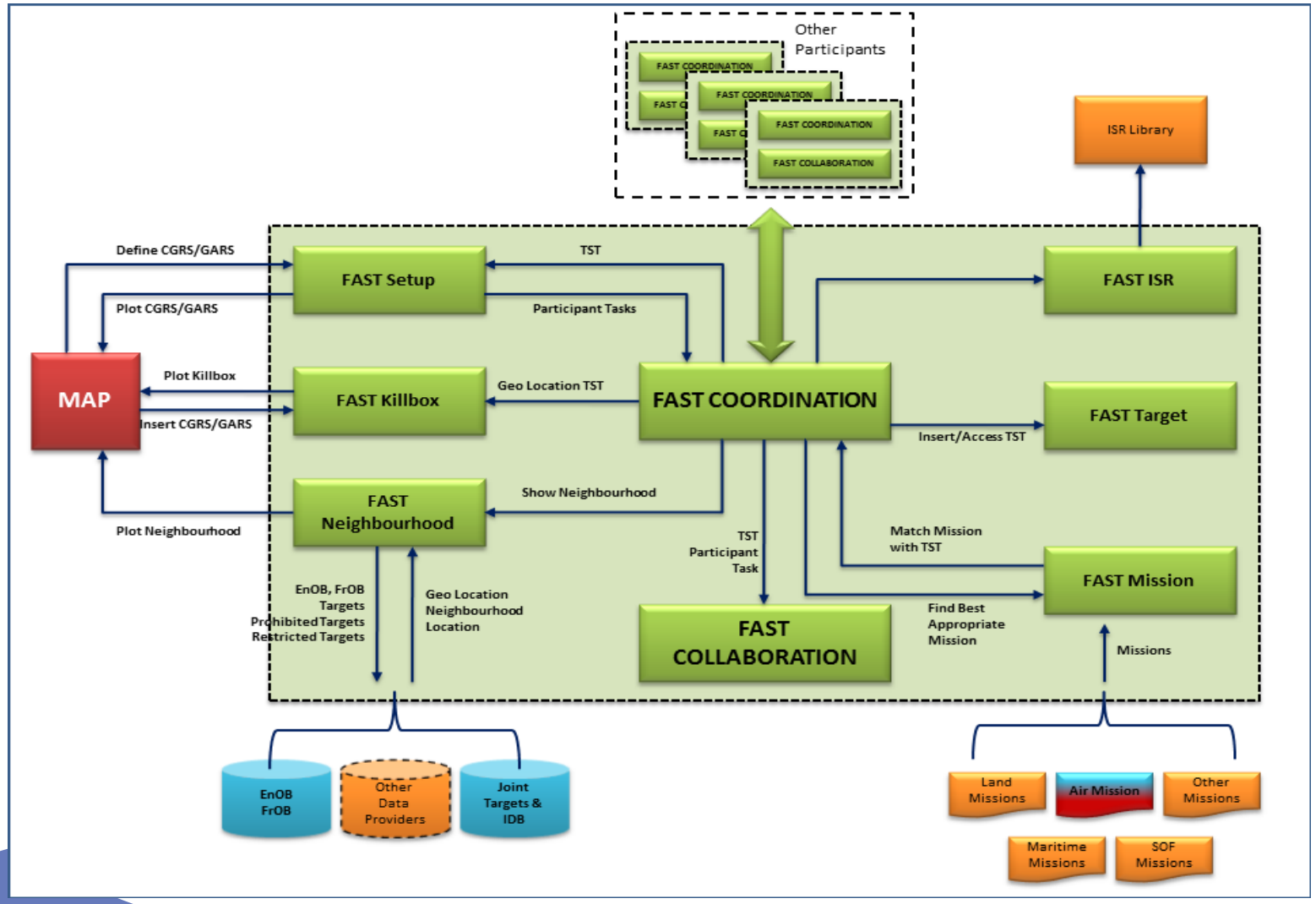
TST System Architecture Considerations

- Data sensitivity:
  - Operational sensitivity of targeting data
  - Protection of TST data
  - Keeping track of any changes for audit logging purposes
- Situational awareness support:
  - Situational awareness as a supporting capability needs to be available during the execution of a TST process
  - Examples: Awareness of on-going missions, orders of battle and other targets in the vicinity of the TSTs.

FAST: NATO TST Tool

- FAST (**F**lexible, **A**dvanced C2 **S**ervices for NATO (Joint) **T**ime Sensitive Targeting)
  - A coordination and collaboration tool designed to aid in the tracking and prosecuting of Time Sensitive Targets.
  - Consists of two components: FAST Coordination and FAST Collaboration
  - Has multiple modules that perform specific functions and that interface with other FAST modules and components as well as with external sources to exchange data.

FAST Architecture



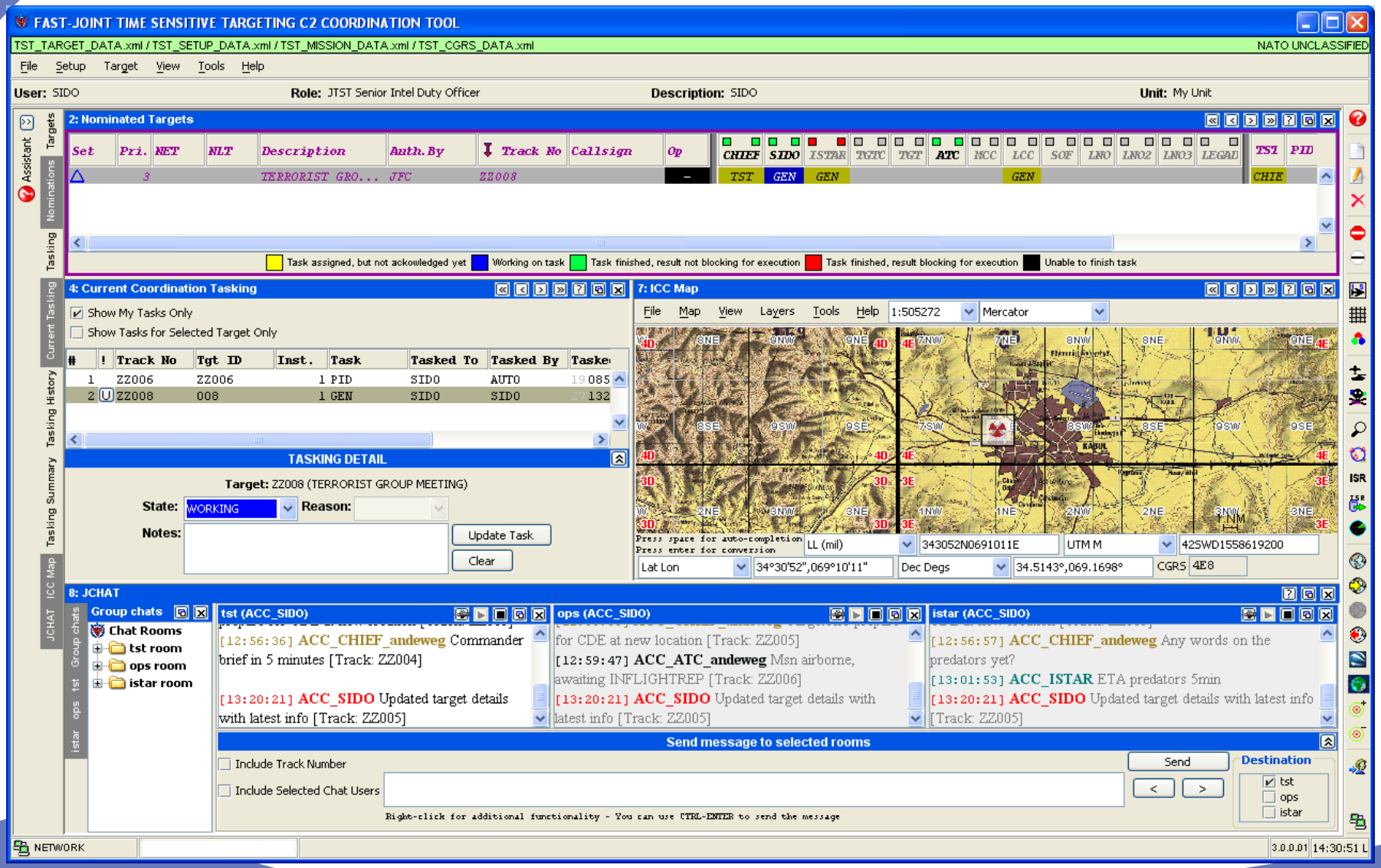
NATO TST Tool Architecture Supporting TST Process

- FAST Coordination:
  - Provide an overview at a glance of the status of all active TSTs and individual tasks assigned to the participants in the TST process
  - Assign TST tasks and update the status of task performance
  - Keep records of all transactions
- FAST Collaboration:
  - Has integrated Joint Chat capability that is used for informal information exchange both within the TST cell and with external groups.

FAST Architecture

- No central database:
  - TST requirements led to choosing a solution without a central database.
  - All FAST users do however connect to a central TST data server to share data. The server itself does not have any data state; it merely acts as a data rely on station between different FAST users.
  - In case of a malfunction of the TST data server, another server can be started at another machine, or even at another site.
- The server is placed on a LAN or WAN. Typically the server will be placed on a mission network.
- Because there is no central storage on the network all FAST clients maintain their own system state.
- FAST application makes sure that all users will have the same state at all times when they are connected to the server.

FAST Visuals



Questions?

Orhan Cetinkaya, PhD
Principal Scientist
NATO Communications and Information Agency
Oude Waalsdorperweg 61, 2597 AK The Hague, Netherlands
T: +31 70 374 3683 NCF: 257 33683 F: +31 70 374 3079
E: Orhan.Cetinkaya@ncia.nato.int W: www.ncia.nato.int