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WHAT TACTICAL COMMAND & CONTROL SYSTEM
THROUGH **CORRELATED AIR PICTURE**
BY NETWORKING MULTIPLE SENSORS

TACTICAL COMMAND & CONTROL

Ground based air defence is critical to provide a line of defence against air threats attacking critical assets. The ability to correlate data from multiple sources, react quickly to changing situations and provide accurate weapon cueing is essential to defeating attacks. A scalable system enables it to be used in a range of scenarios.

Saab's Tactical Command and Control System (TaCCS) is a light weight, highly effective command and control system capable of threat evaluation, weapon assignment and air defence support functions.

The system supports up to 3 command posts, 3 radar and 15 weapon detachments interconnected by combat net radio and/or wireline communications. TaCCS supports a ground based air defence coordination cell which provides air defence coordination and a control interface between the supported formation and defending Battery or Troop.

The system's two primary functions are threat evaluation/weapon assignment and air defence support.

Threat Evaluation/Weapon Assignment

- Generating and presenting operators with a correlated air picture with inputs from surveillance radar sensors.
- Automatically performing threat evaluation of the air picture to identify air threats.
- Automatically assigning weapons to air threats.
- Cueing weapon operators to assigned air threats.

Air defence support

- Airspace control measures
- Control of radars
- Manual override & control of weapon assignment process
- Internal messaging system
- Data recording & replay
- Radar simulator for training support
- Interface to external Command Support System



KEY SYSTEM FEATURES

- Networks up to 3 radars, 15 GBAD weapons, 3 command posts.
- Distribute the correlated local air picture to the support HQ

TaCCS can operate in many configurations; independent troop, full battery or standby command post to assume command rapidly if required. The ability to integrate multiple radars deployed away from the Command Post provides the ability to detect targets earlier, counter terrain masking and cycle radars to minimise exposed signature whilst still providing coverage.

Functionality

The Master command post controls radars throughout the operation of the defence. Commands entered at the master command post are automatically sent via communication links to the radars. Deployment data is entered at the command post either automatically from the output of the air Defence Command Post Automation (ADCPA) tool or manually entered. Deployment data includes information such as weapon and radar locations, defended areas, safe lanes and minimum risk routes. Changes in Deployment data are immediately broadcast to all detachments to ensure common situational awareness within the defence.

Real time sensor data from radar detachments is forwarded to master and standby command posts. At the Master command post, a correlated air picture is established and forwarded to other elements. Each air track is subject to threat evaluation based on operator-specified parameters. Weapons are automatically assigned to air threats based on engagement geometry, missile kinematics and available weapons. The master command post automatically issues weapon assignments to weapon detachments.

Standby command post maintain their own correlated picture and threat assessment/weapon assignments so it can quickly assume the role of Master command post.

Weapon detachments receive the correlated air picture and weapon assignments. At the weapon detachment, TaCCS generates cueing tones for weapon operators to guide the operator to orientate the weapon azimuth to the assigned air threat.

The engageability of the threat is calculated based on geometry, missile kinematics and terrain masking effects and indicated to the weapon detachment. The weapon operator retains control over weapon launch.

The internal messaging system provides a command support function. The format and content of messages are customer-specific and configurable. Information can be exchanged between the detachments via the use of formatted or free text messages. The messaging system prioritises tactical engagement data over administrative messaging traffic to ensure the system reacts to the threat environment.

TaCCS provides a radar simulator than can inject an air picture into the system for training purposes. The air picture can be generated by an instructor or be a replay of data recorded during operation.

SPECIFICATIONS

COMMAND POST SUBSYSTEM

Tactical Computer

CPU: Pentium M 1.1 GHz microprocessor
Liquid Crystal Display: 1024 x 768 pixels
Screen size: 164mm (diagonal)
Power supply ...
external: 18-32 V DC
internal: 7.2 V DC Li-Ion rechargeable battery
Hard drive: 20Gb
RAM: 1Gb
Dimensions: 229 x 178 x 84mm

Desk Terminal

LCD resolution: 1024 x 768 pixels
Screen size: 380mm (diagonal)
Power supply (external): 28V DC
Dimensions: 443 x 453 x 103 mm
Mass: 10.5kg

Power Interface Unit

Input supply: 20-33 VDC
Output supply: Input supply -1V
Over current protection: 10 A input fuses
Spike clamping voltage: 100 V
Dimensions: 170 x 140 x 85mm
Mass: 2kg

WEAPON DETACHMENT SUBSYSTEM

Handheld Terminal

LCD resolution: 800 x 600 pixels
Screen size: 211 mm (diagonal)
Power: 6-33 V DC
Dimensions: 304 x 193 x 42 mm
Mass: 1.7 kg

Enhanced Weapon Interface Unit

Power (external): 28 V DC
Dimensions: 229 x 200 x 107mm
Mass: 3.35kg

Support Equipment

USB flash drive
Tactical computer software installation media
Optical drive

Communications System

Customer specified