CWIX – Communications Focus Area
WInnComm-Europe 2019

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What is CWIX?

- CWIX, is the greatest test of NATO’s interoperability and a key step in the interoperability process.
- CWIX enables ‘day zero’ interoperable forces, and supports ‘interoperability by design’.
- CWIX provides commanders with confidence that people, processes and technology are fit for purpose.
- CWIX improves the exchange of information and situational awareness to speed up decision making.
- CWIX supports Alliance partners and other organizations to improve interoperability to support NATO missions.
What are the 4 CWIX ‘X’s

- Scientists **explore** emerging interoperability standards and solutions through collaborative innovation activities
- Engineers **experiment** with new interoperability standards and solutions to assess their suitability for implementation
- Capability testers **examine** interoperability between fielded and emerging capabilities
- Operational users **exercise** capabilities and test interoperability using a relevant vignette
Operational Relevance?

Time (years)

-2 Years
-1 Year
-6 months
Ready

Technical Validation & Verification
CWIX

Operational Evaluation & Validation
STEADFAST COBALT

Operational Certification
TRIDENT JUNCTURE/JOUST

Combat Trainee

Combat Ready

capability level

FOC

IOC

TVV

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• Institutionalize a federated approach in future mission based on AMN lessons learned

• CWIX 2019 supports FMN affiliates by providing an environment for:
  – Confirming spiral 2 specifications
  – Verifying and Validating spiral 2 and 3 specifications
  – Experimenting with spiral 4 specifications
  – Identifying requirements for spiral 5+

• Today’s FMN Vision: **Day Zero Interoperable Forces**
  • Part 1 (Current): Operate Together: Exploit our Strategic Advantage
  • Part 2 (Future): Adapt Together: Effectively Transform Capabilities to Maintain our Edge

• Strategic FMN Goals for Capability Development
  • Short Range: Optimization of Current Mission Environments
  • Intermediate Range: Adaptation of Existing Capabilities
  • Long Range: **Interoperability by Design**
The Interoperability Continuum

Federation

Allows NATO and partners to agree and test interoperability requirements

Nations

FMN Structures and Roadmap

Requirements

Define/Specify

TIDE Sprint

TIDE Hackathons

Design

Integrate

Implement

Verify

Operate
CWIX 2019 Focus Areas

- OP CMD
- Land
- MAR
- AIR
- Cyber
- Comms
- GEOMETOC
- LOG
- M&S
- TDL
- FMN CS
- FCS
- FMN Exercise
Why Communications as Focus Area at CWIX:

Precondition:
- First spirals of FMN are focused on static / strategic networks
- Applications were only tested on wired networks

New requirements:
- Spiral 4+ of FMN include the tactical edge and mobility
- Interoperability standards for tactical networks are needed
- Applications over radio networks face severe challenges

Conclusion
- A COMMS FA at CWIX is
  - ideal for bridging the gaps between network and applications
  - good environment for more disruptive communication experiments
Communications FA
Statistics – Substantial Growth

CWIX 2017

- 16 Capability Configurations
- 7 Alliance & Partner nations

Main Participants

Main Nations

CWIX 2018

- 44 Capability Configurations
- 13 Alliance & Partner nations

Main Participants

Main Nations

CWIX 2019

- > 60 Capability Configurations
- 14 Alliance & Partner nations

> Objective 9 @ Comms Focus Area

Validation FINN Spiral 4 Service Instructions for the use of public networks, including the Internet, as a network transport mechanism.

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## Technical Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Test interoperability of waveforms including on the air interface to facilitate multinational missions (NBWF, ESSOR, ...).</td>
</tr>
<tr>
<td>2</td>
<td>Test the integration of radios into a heterogeneous tactical network.</td>
</tr>
<tr>
<td>3</td>
<td>Test the coalition routing interoperability in a mobile tactical environment (tactical router).</td>
</tr>
<tr>
<td>4</td>
<td>Test the application and middleware over tactical radio networks, including interfaces for network awareness and Quality of Service.</td>
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<tr>
<td>5</td>
<td>Test security architectures and mechanisms.</td>
</tr>
<tr>
<td>6</td>
<td>Test management systems for networks and security mechanisms.</td>
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</tbody>
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## Programm-/Initiative-related Objectives

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<td>7</td>
<td>Test coalition interoperability in the context of <a href="https://www.nato.int">NATO Response Force (NRF)</a> including fielded and near-fielded systems, e.g. VJTF (Very High Readiness Joint Task Forces).</td>
</tr>
<tr>
<td>8</td>
<td>Validate <a href="https://www.nato.int">FMN Spiral 3 Service Instructions for Protected Core</a> Networking and Communications.</td>
</tr>
<tr>
<td>9</td>
<td>Validate <a href="https://www.nato.int">FMN Spiral 4 Service Instructions for Protected Core</a> Networking and Communications.</td>
</tr>
<tr>
<td>10</td>
<td>Validate <a href="https://www.nato.int">FMN Spiral 4 Procedural and Service Instructions for the Tactical Edge</a>.</td>
</tr>
<tr>
<td>11</td>
<td>Explore relevant technologies for <a href="https://www.nato.int">FMN Spiral 5+</a> for the use of public networks, including the Internet, as a network transport mechanism.</td>
</tr>
<tr>
<td>12</td>
<td>Explore relevant technologies for <a href="https://www.nato.int">FMN Spiral 5+</a> for allowing semi-automated information exchange (informal messaging, web hosting) between the federation and the public Internet in support of <a href="https://www.nato.int">Civilian-Military information sharing</a>.</td>
</tr>
<tr>
<td>13</td>
<td>Explore relevant technologies for <a href="https://www.nato.int">FMN Spiral 5+</a> for enhancing network architecture to support information sharing with force elements ‘on the move’.</td>
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Flexible Cable Conducts are required for CC connectivity within tent.

COMMS unclass tent
Flexible Cable Conducts are required for CC connectivity within tent.
Questions ???