MaCE (v4)

Mobile AD-HOC Communications Environment.

Features

- Dynamic learning of the network
- Integrated device control
- 40 configurable audio channels
- Bi-Directional SNR representation
- Cot Integration
- Indication on loss of GPS and loss of contact
- Custom Map Provider controls
- Modular feature packages

- User selectable interface themes
- Embedded browser
- Dockable interface
- Intuitive touch screen interface
- Instant replay of voice transmissions
- Offline mapping

Overview

The **M**obile **A**D-HOC **C**ommunications **E**nvironment (**MaCE**) application is designed to operate with the Wave Relay® MANET radio solutions from Persistent Systems. MaCE provides a flexible dynamic interface for the visualisation, configuration, and control of operational aspects of your MANET network, all from within a single interface. MaCE's ability to self-learn the network reduces complexities of adding nodes to the interface and provides a readily accessible overview of your deployed network from the perspective of the operator.

MaCE combines the key elements that you require to gain insight and control, not only of your MANET network but of all your operational elements. MaCE provides voice, video, chat and situational awareness through a single pane of glass, simplifying command and control considerably.

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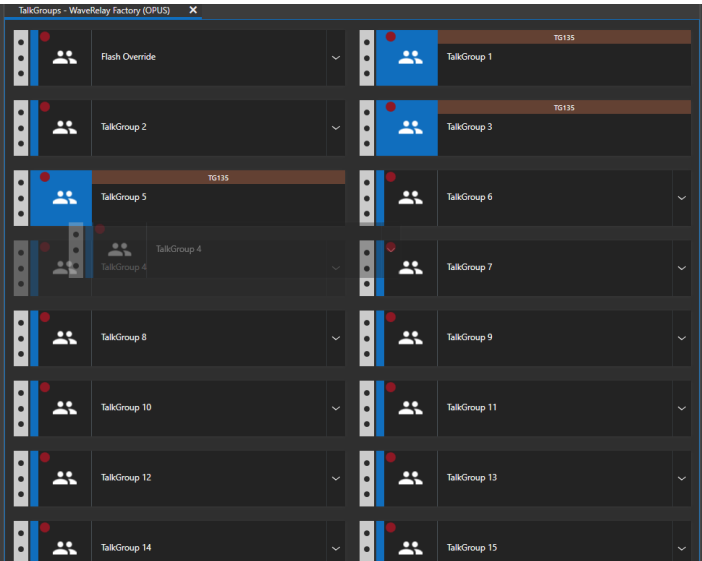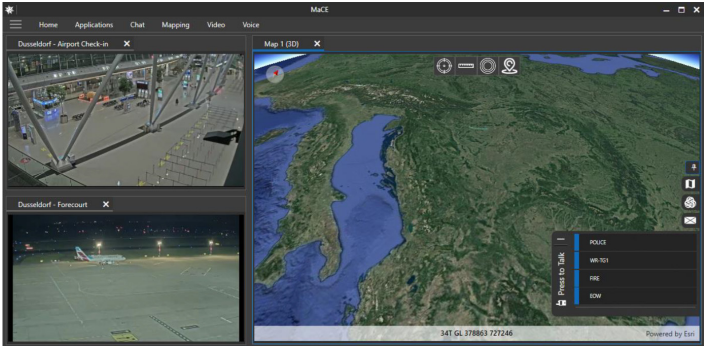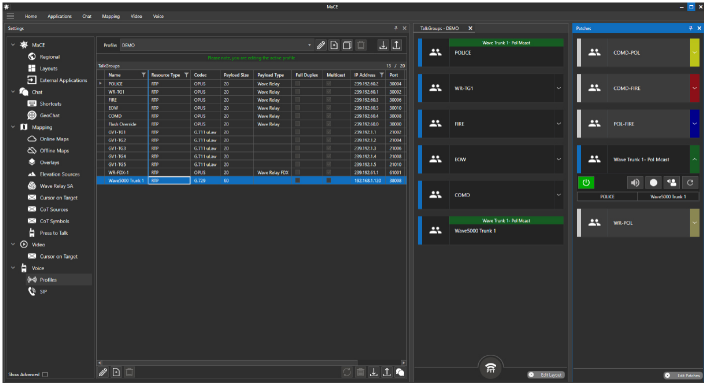## SOLUTIONS

Talk Group Patching

Talk Group patching allows the joining of disparate Talk Groups by the user to join conversations together. Patches can consist of any available transport or protocol and automatically restream and transcode between each leg.

MaCE provides a loop detection mechanism to try and prevent audio loops from being created on a network when user patch Talk Groups. The loop detection warns the user but does not prevent the patch from proceeding if the user wants to force it.

Mapping

The ability to change viewpoints for situational awareness can assist with interpretation and focus on mission objectives. MaCE provides the ability to switch between map views between 2D and 3D on the in-focus map via on map flyout controls, to allow better visualisation of the operational picture.

Multiple maps allow for simultaneous visualisation of map-based information and allows for simultaneous wide-angle view while focusing in on a specific area. Base map layers can be applied independently for increased control along with the ability to overlay additional information into the map for increase situational awareness.

Push-To-Talk Controls

Communications to mobile assets can be via the integrated chat facility or via the embedded 16 channels of multicast audio. Communication directly from the application reduces the requirement for essential assets to be located with operations staff allowing for more assets to be deployed in the field.

Each channel can be independently enabled/ disabled, muted, or volume level controlled to ensure that you have total control over your environment.

These channels can be monitored locally on the operators terminal, or specifically chosen to be broadcast via other means for operational awareness. Audio can be reviewed using the Instant Replay functionality, to ensure accurate and timely information is delivered throughout your network.

Group Push-To-Talk allows multiple channels to be activated simultaneously, for time sensitive transmissions.

Node Organisation

Find nodes through the embedded filtering options based on keywords in any of the defined fields.

You may need to reconfigure an remote device and are only able to locate it by its serial number. Simply enter the serial number or portion of, into the Node SA panel and quickly track down the desired device.

Leveraging off the embedded configuration features within MaCE, you can modify the endpoint and get your operations back on track without needing to understand complex IP address schemes.

General

- Headless operation (**no server required**).
- Day / Night themes.
- Embedded flash-capable browser.
- Embedded Document and Spreadsheet editors with no Office install required.
- Embedded PDF viewer with no Adobe install required.
- Fluid dockable interface for use in any environment.
- Network selection available which selects which network interface all modules will use.

Wave Relay and Mapping

- Display dynamically learnt Wave Relay nodes.
- Display forward and reverse SNR between nodes.
- Online and offline map source availability.
- Upload and merge offline maps locally.
- Rotate and zoom in your map panel.
- Display grid overlay in your coordinate format of choice.
- Seamless touch screen integration.
- Display information about each Wave Relay node in a grid for ease of monitoring.
- Hide or show individual nodes on the map.
- Follow nodes on the map as they move.
- GPS Error indication.
- Node heading indicator.
- CoT 2525C display.
- Serve offline map tiles to the network.

Chat

- MaCE chat to communicate with other MaCE instances.
- Create message shortcuts for ease of message transmission.

Video

- Decode and render live audio/video streams received through RTSP, RTMP, HTTP, UDP, RTP, MMS/MMSH protocols.
- Record live videos locally your machine.
- Decode H264, H265 and most of the other audio / video codecs.
- Apply text overlays over the decoded frames.
- Render a second copy of a video stream without a second network connection.

Voice

- 40 virtual talk group integration.
- Voice Codec capability: G.711 uLaw, G.711 aLaw, G.722 HD, G.726 (**16kbps**), G.726 (**24kbps**), G.726 fixed payload, G.726 (**40kbps**), G.729, DVI4 Narrowband, DVI4 HD, SPEEX Narrowband, SPEEX Wideband, ILBC-30, Linear PCM, Linear PCM HD, Linear PCM Ultra HD, SPEEX Ultra Wideband, DVI4 Ultra HD, ILBC-20, Linear PCM CD Audio, Linear PCM (**little endian**), Linear PCM HD (**little endian**), Linear PCM Ultra HD (**little endian**), Linear PCM CD Audio (**little endian**), SILK Narrowband, SILK Wideband, OPUS, AMR Narrowband.
- Custom payload types for OPUS.
- Voice recording and instant playback.
- PTT log.
- Hot keys for ease of transmission.
- Listen to and monitor voice channels in configurable outputs for use in any situation.
- GV1 Radio over IP (**RoIP**) discovery panel.

Part Codes

CS MACE APP V4:
- Perpetual per machine license to the core application.

CS MACE ENC:
- Required for Voice Payload encryption subject to export approval.

CS MACE REC FOR:
- Forced Voice Recording / Optional Video Recording.
- Not to be ordered in conjunction with CS MACE REC OPT CS.

MACE REC OPT:
- Optional Voice Recording / Optional Video Recording.
- Not to be ordered in conjunction with CS MACE REC FOR CS.

MACE TGR EA:
- Additional TalkGroup (**each**).

CS MACE PTC EA:
- Additional Patch (**each**) CS.

MACE SUP 1YR:
- One year support warranty extension.

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Steatite will work with our customers to gain a clear understanding of their application.