Radio Interoperability System - RIOS

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RADIO COMMUNICATIONS

Communications Interop problem

- Ugandan Peoples Defence Force (UPDF) Peace Keepers deploy to Kenyan Defence Force (KDF) controlled space in Somalia for joint operations.
- The UPDF use Harris VHF communications equipment .
- They Kenyans use Codan HF communications. They are not able to communicate!
- How are you going to fix this?

Solution

The Codan RIOS provides interoperability between a range of communications devices, including radios, smartphones and computers, enabling a fully integrated communications network from anywhere in the world.

Communications Interop problem

- Ethiopian Peace Keepers deploy to Burundi Peace Keepers controlled space in Mali for joint operations.

- They both use Harris HF radios.

- Unfortunately, they use different encryption keys so are not able to communicate

- How are you going to fix this?

Solution

The Codan RIOS is the solution for enabling users with different vendor devices and encryption to seamlessly communicate across any platform.

How it works

RIOS: Radio Interoperability System

A processing code used for cross-banding traditionally non-compatible radio, telephone and computer networks.

Radio Entry Point

RIOS I/O Chassis

UHF Network

The RI Tactical Gateway

RIOS Server Computer

The RIOS Rackmount Gateway

Features

- **Transmit** to all signalling platforms, including **HF**, **VHF**, **UHF**, 700/800 MHz, cellular, Intergrated Digital Enhanced Network (iDEN) and satellite phones.

- **Access** all types of communications including radio, smartphone and IP video sources.

- **Control** the remote RIOS Server via 3G, 4G or Wifi wireless link from any wireless location on any carrier.

- **View** multiple IP video feeds connected to the RIOS Server as well as from other RIOS Lite users.

Features

- **Send** video and pictures to with RIOS Lite Push-To-Send Video and Camera capabilities.

- **Message** RIOS Client and RIOS Lite users with internal chat messaging.

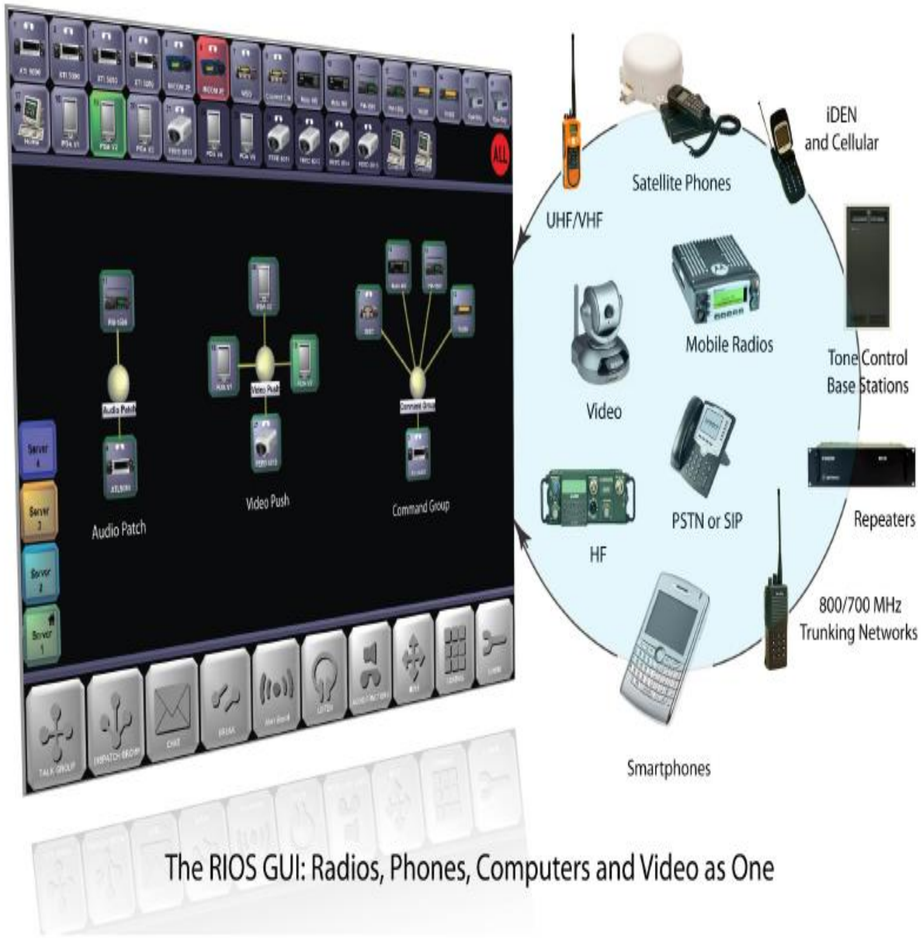
- **Track** users via the RIOS GPS Mapping Module within an integrated mapcentric PTT interface- GSM users only

RIOS – An introduction

- The RIOS interoperates dissimilar communication networks by collecting and converting local communication signals into digital IP packets.

- RIOS accepts signal from variety of sources and consolidates their capabilities into a unified operating platform.

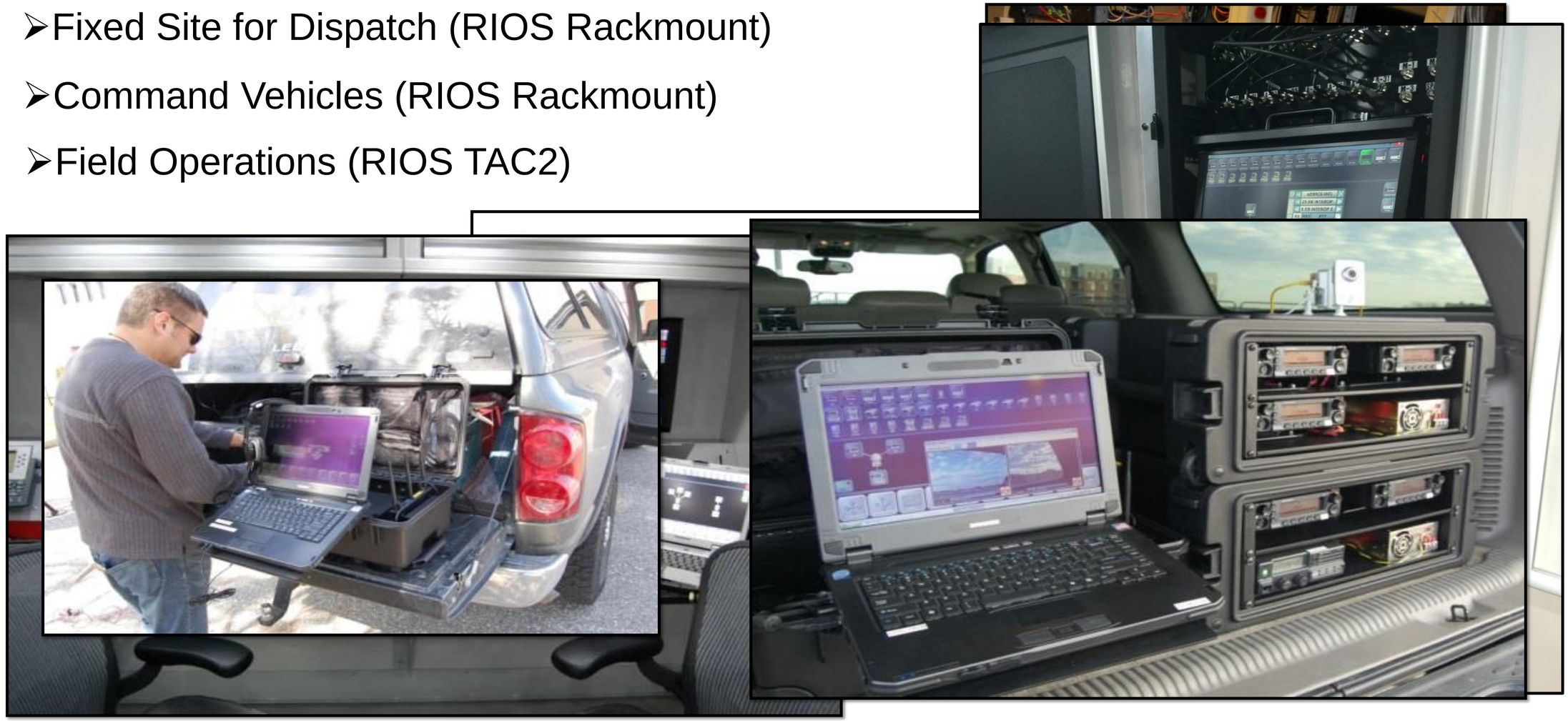
- Control the system is accomplished via the RIOS Graphical User Interface (GUI).



The RIOS GUI: Radios, Phones, Computers and Video as One

RIOS Application

- Fixed Site for Dispatch (RIOS Rackmount)
- Command Vehicles (RIOS Rackmount)
- Field Operations (RIOS TAC2)



RIOS TAC2 Physical Interfaces

Codan Radio with RIOS Interface Cable

Radio Interface (8)

DC Power In

USB Interface

RIOS LiTE Mission Critical Smartphone Systems

RIOS LiTE Mission Critical Smartphone Systems

For agencies who want to provide:

SECURE SSL smartphone capabilities:

- Private PTT Conversations
- Group PTT Communications
- Text Messaging
- File Sharing
- Video Streaming
- Interactive GPS Mapping

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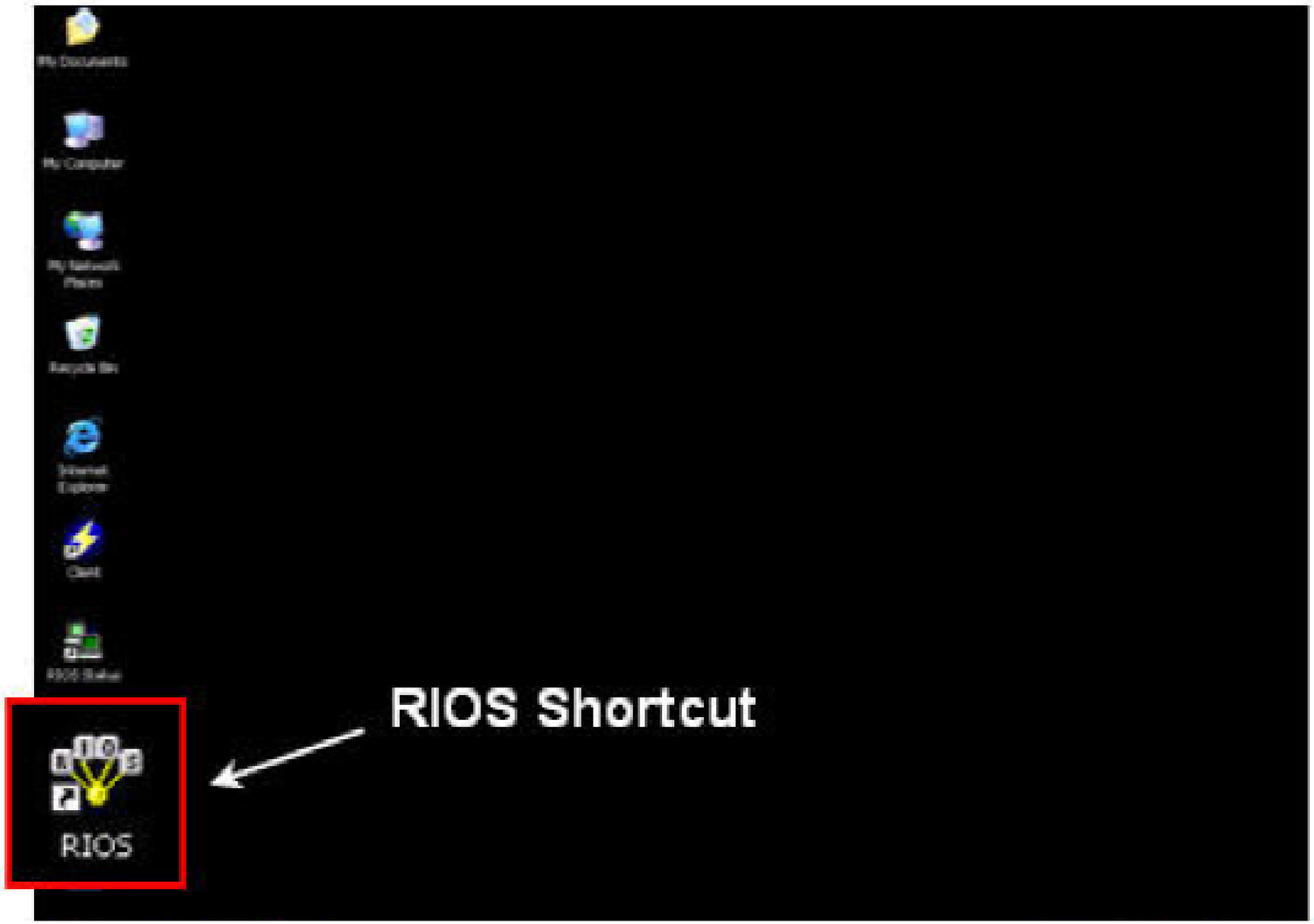
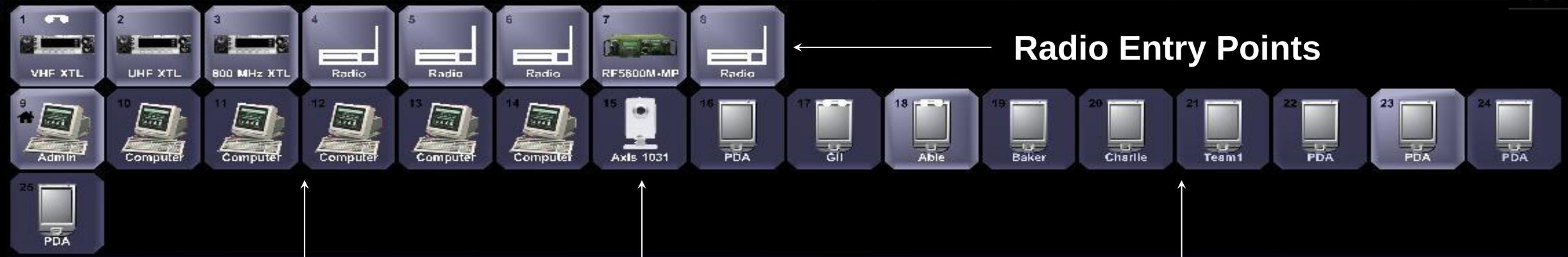
RIOS Setup

- 1. Start RIOS GUI from the Windows Desktop by double clicking the **RIOS Shortcut**.
- 2. RIOS Login screen appears. Input default User Name “admin” with Password “admin”.



The RIOS Graphical User Interface



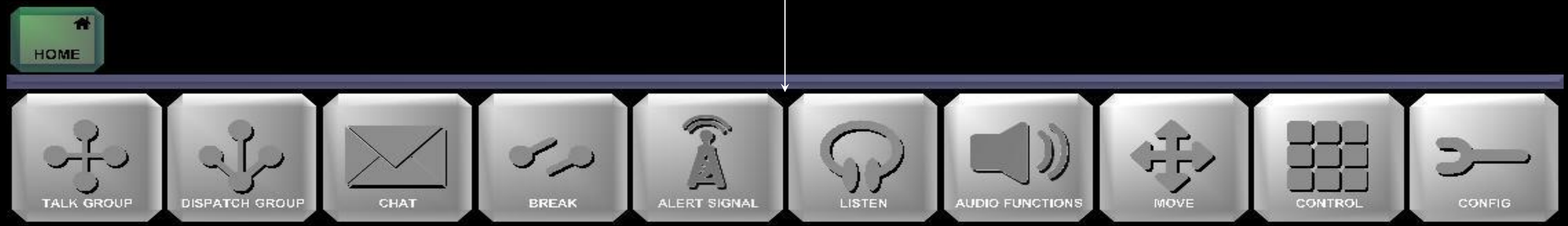
Radio Entry Points

Computer Assets

Video Assets

Smartphone Assets

Functions



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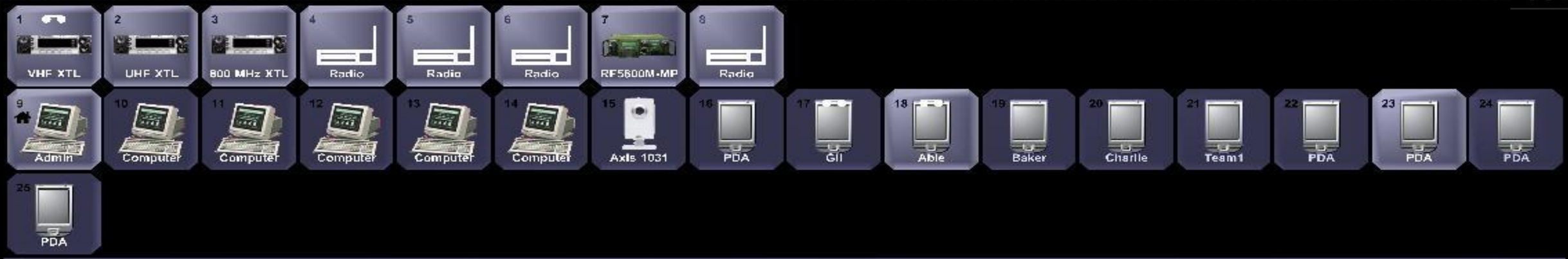
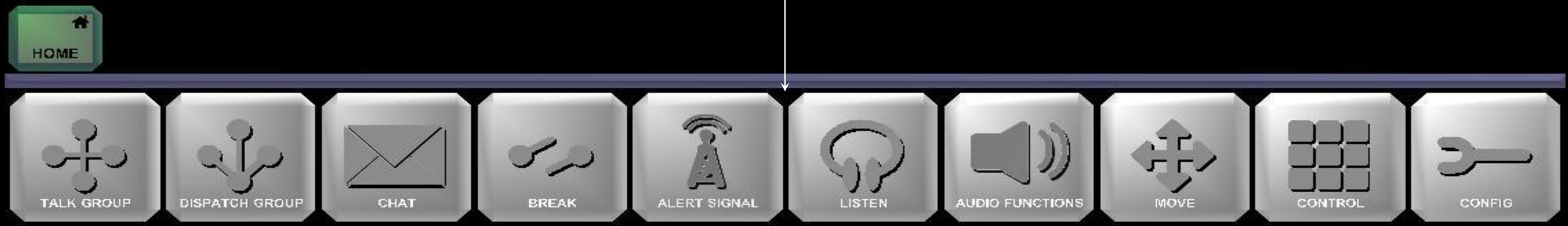
The RIOS Graphical User Interface



- The Functions of RIOS are displayed at the bottom of the RIOS GUI interface.
- Functions for specific action. They are the starting point for creating interoperability between Physical and Virtual Ports.



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The RIOS Graphical User Interface

- Connecting Gateway Ports within RIOS follows a logical three-step process.

1. **SELECT** the gateway/gateways

2. **ACTIVE** the function

3. **CONFIRM** the function

- RIOS GUI offers Push-To-Talk for operator transmission. The operator can transmit to a single gateway by selecting the gateway or an entire group by selecting the centre node of a Talk Group. Similar to industry standards, Gateway Ports highlighted in RED are in transmit mode while Gateway Ports highlighted in GREEN are in receive mode.

The RIOS Graphical User Interface

Transmitting from a Computer to a Radio Asset

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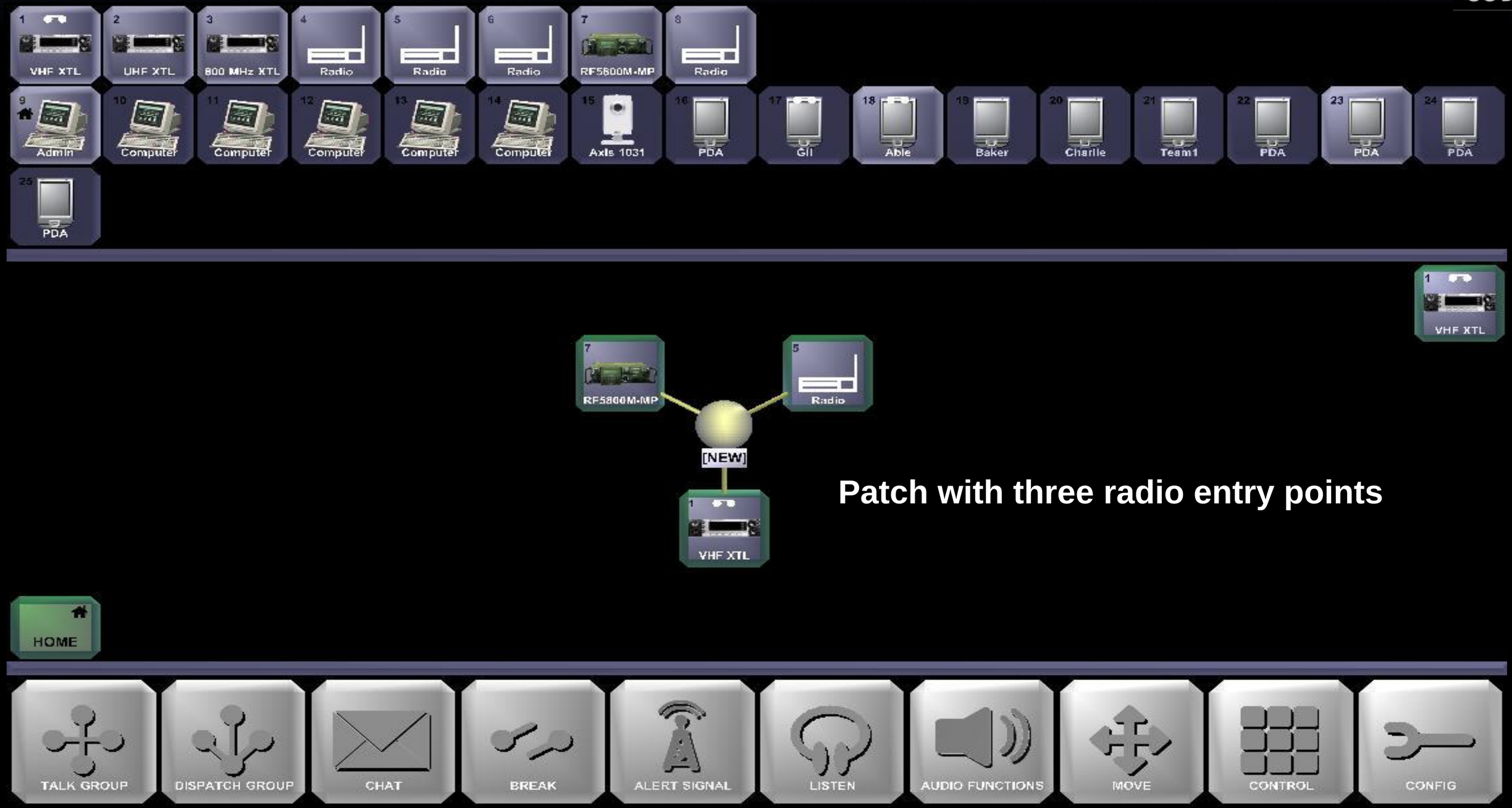

Patch with three radio entry points

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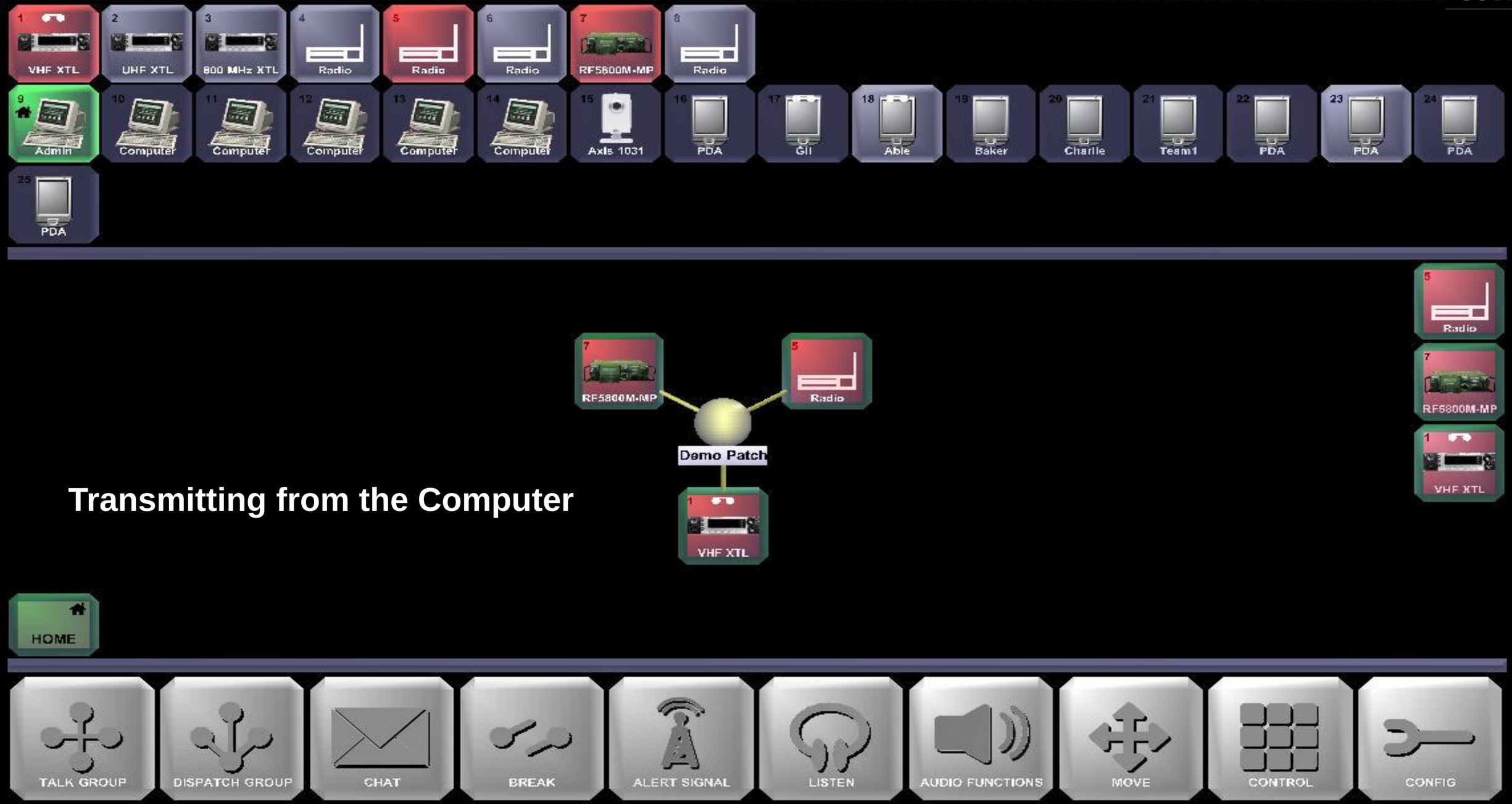
The RIOS Graphical User Interface



Transmitting from the Computer

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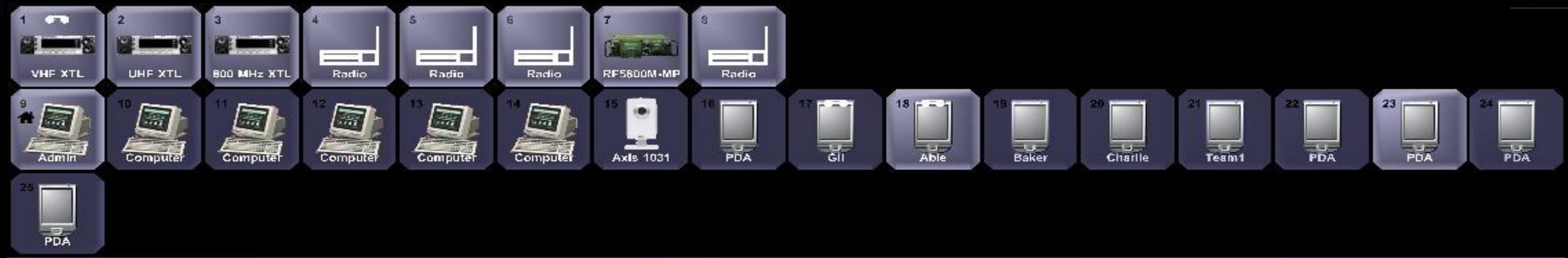
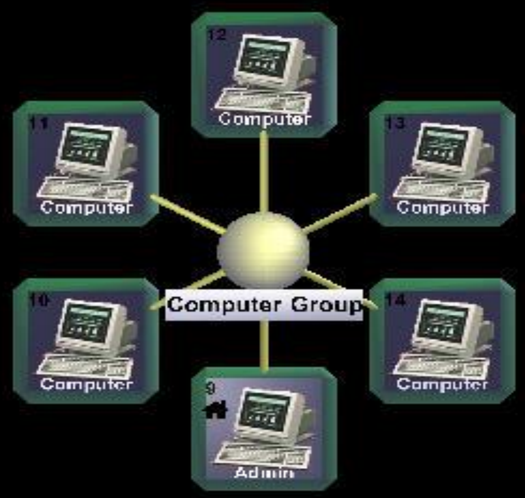
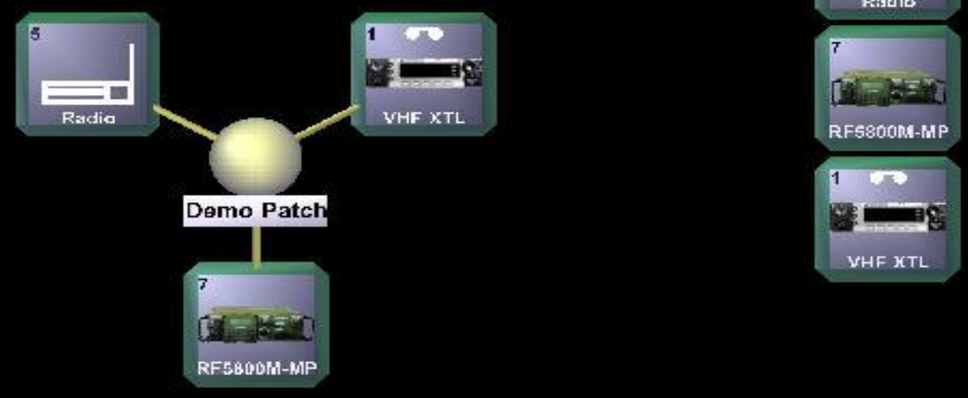
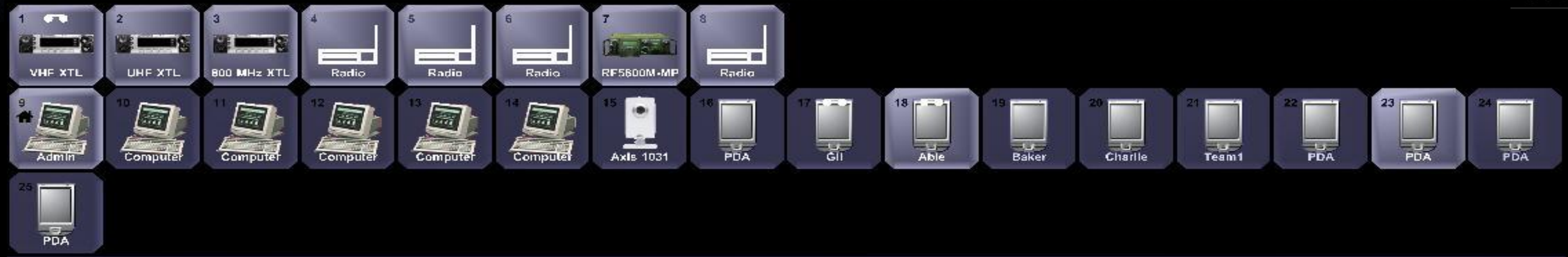


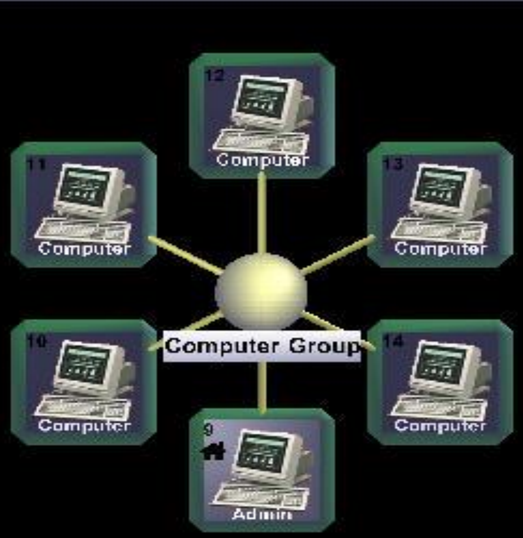


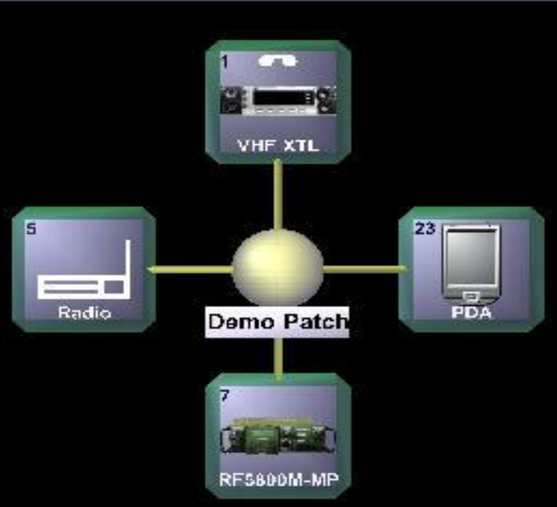


Computers arranged in a Talkgroup

The RIOS Graphical User Interface







RIOS LiTE added to the patch

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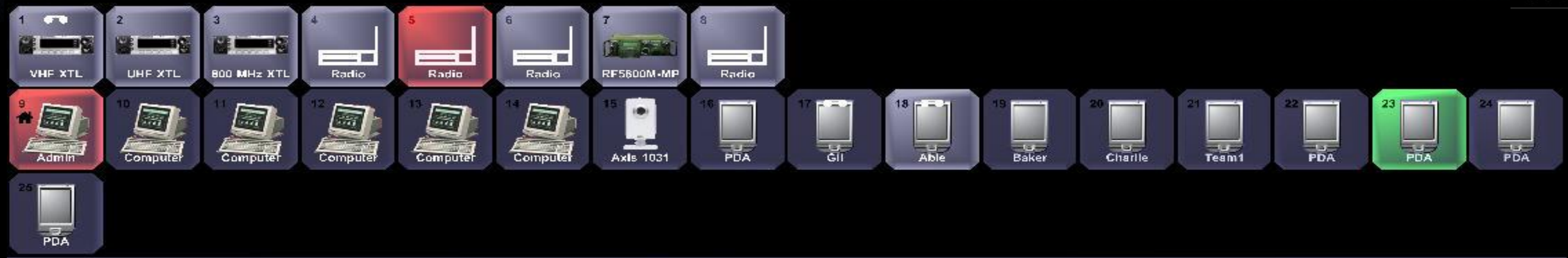

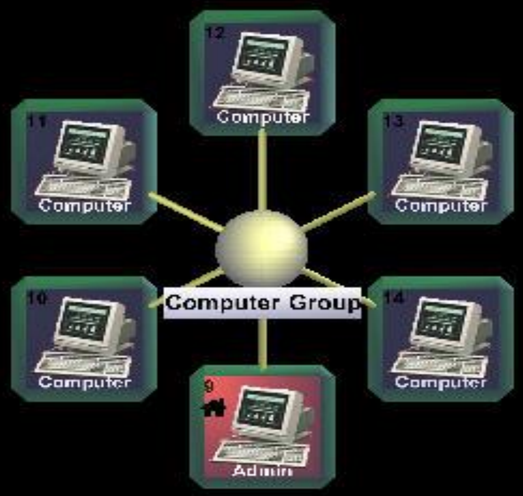

RIOS LiTE transmitting to a radio

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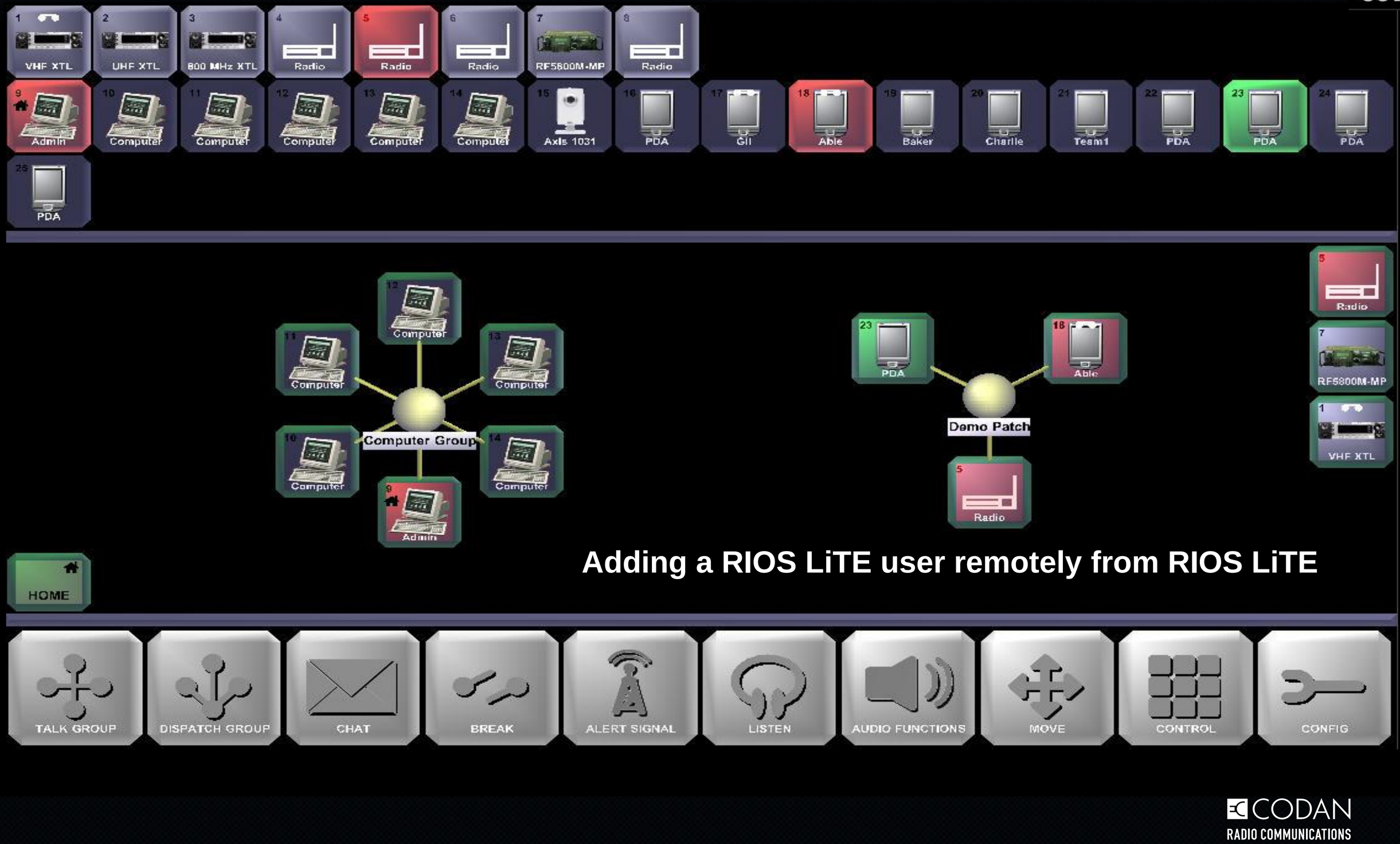

Adding a RIOS LiTE user remotely from RIOS LiTE

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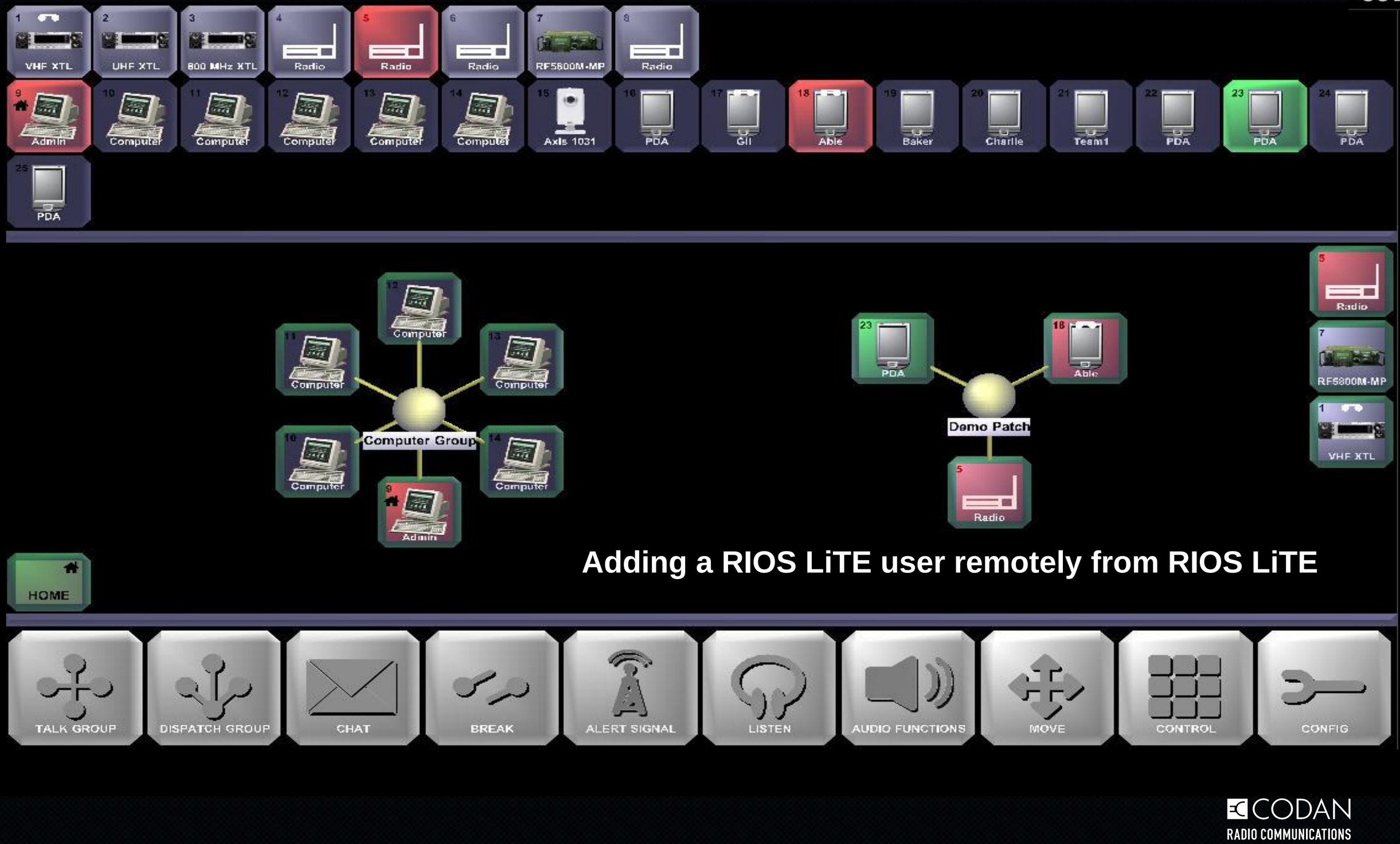
The RIOS Graphical User Interface



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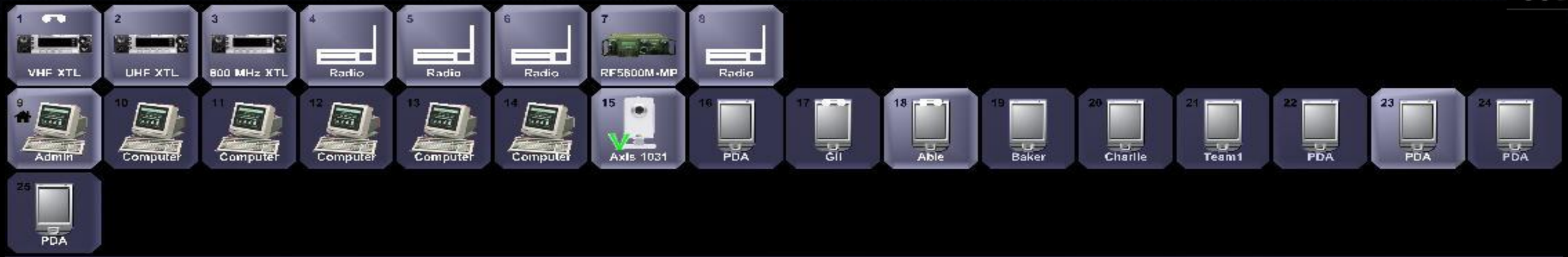

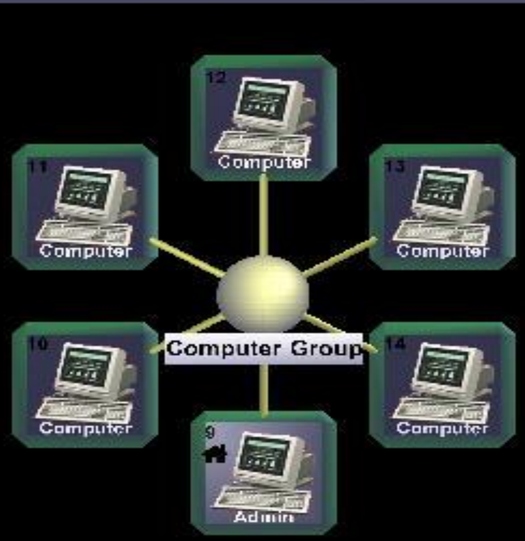

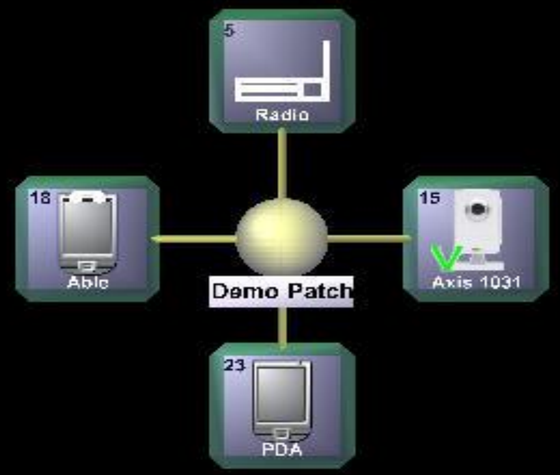

Adding a Video Asset to RIOS LiTE

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The RIOS Graphical User Interface

RIOS Video Viewer with Recording

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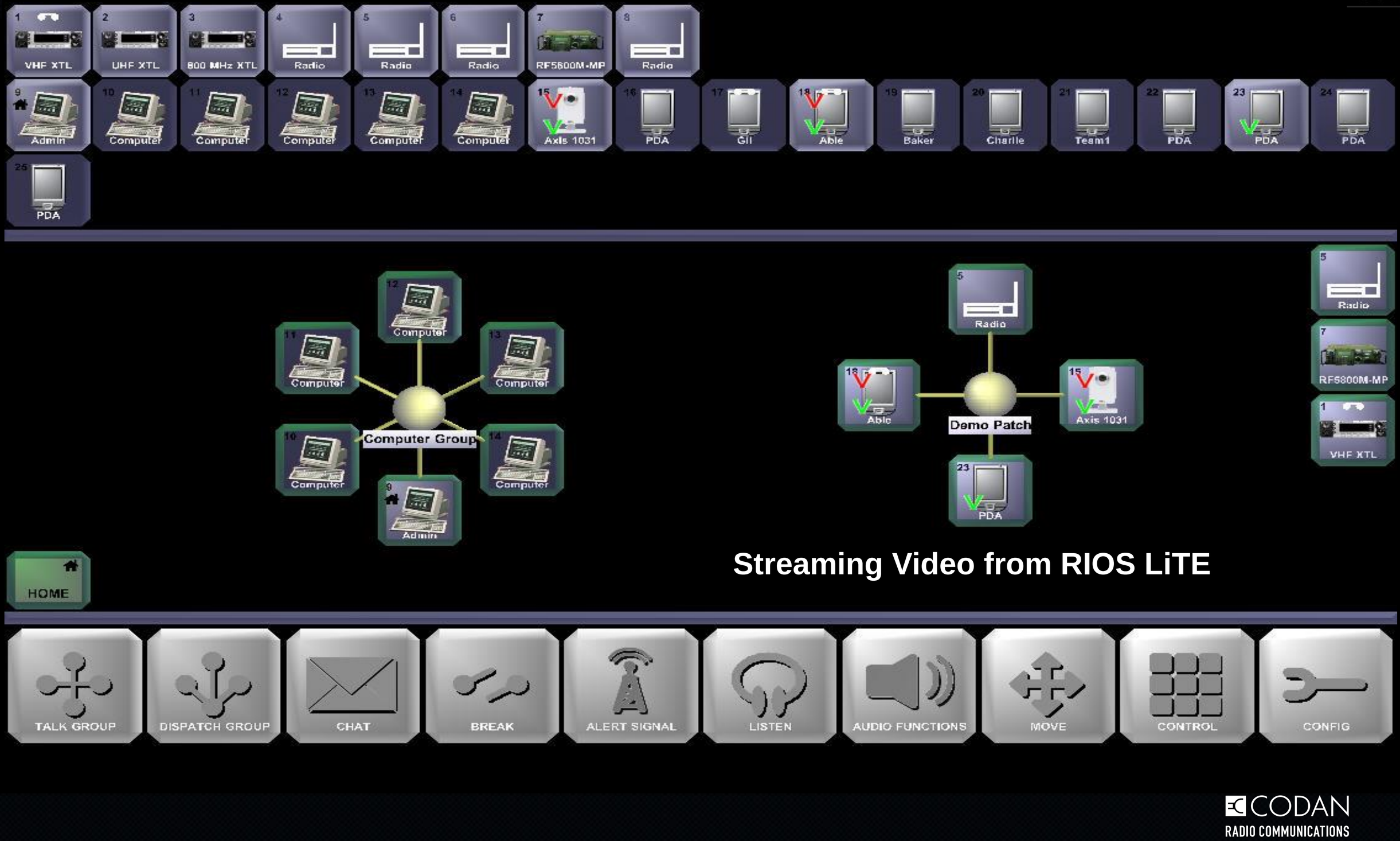

Streaming Video from RIOS LiTE

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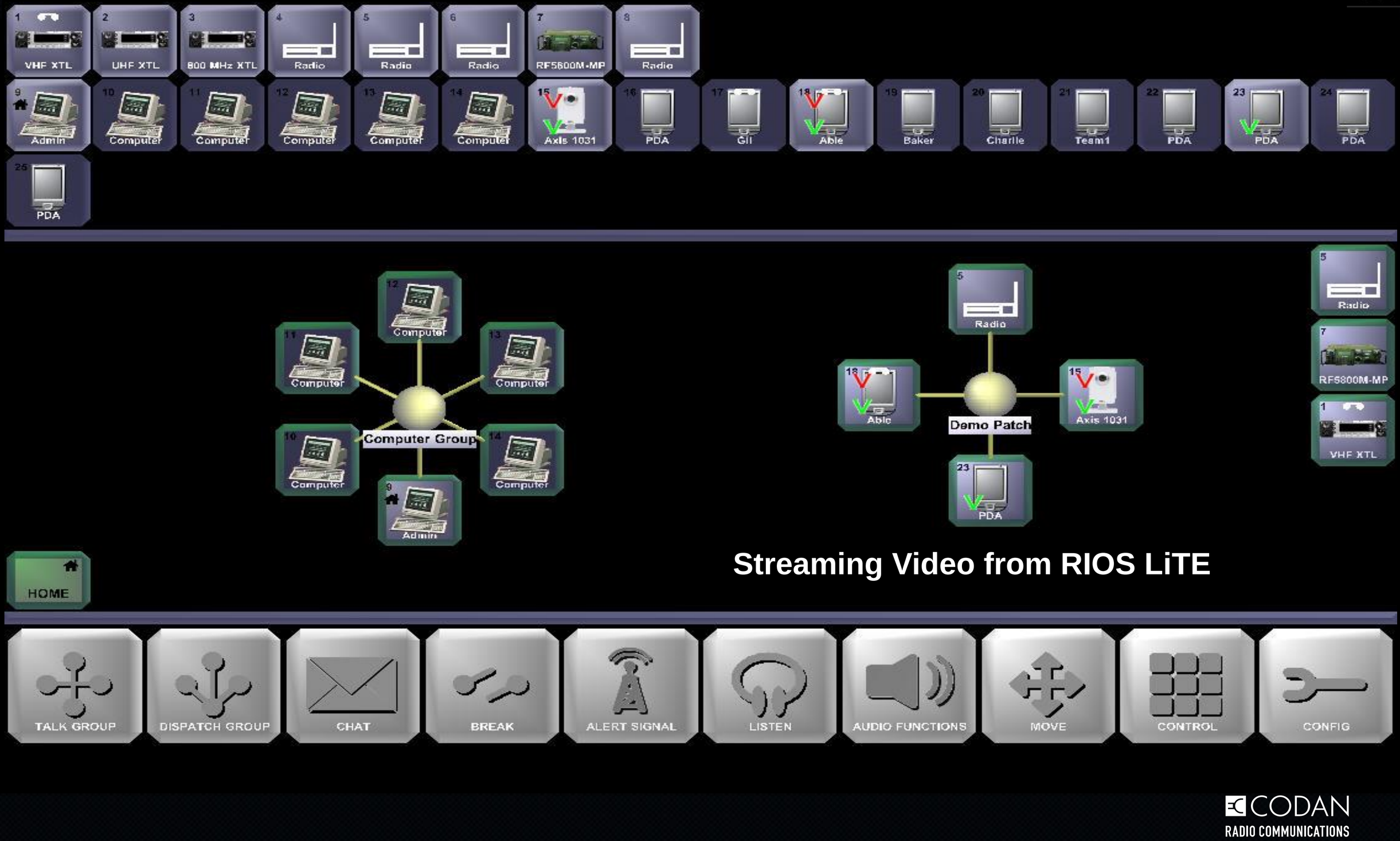

Streaming Video from RIOS LiTE

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The RIOS Graphical User Interface

Secure Chat Session within RIOS

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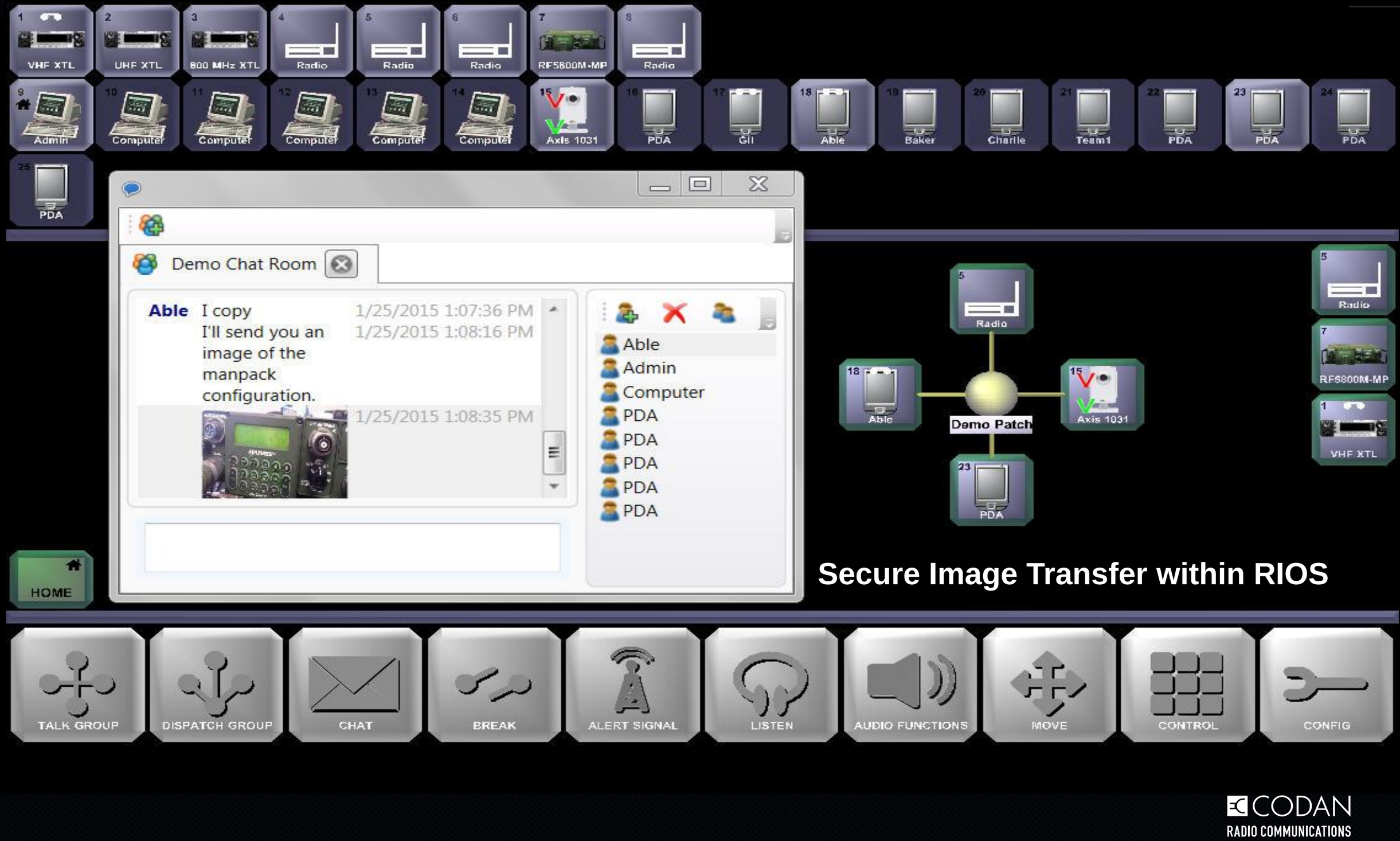

Secure Image Transfer within RIOS

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Mapping with RIOS GPS Viewer

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Questions?

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