



3020 LifeX

## **Service Definition**

Hosted 3020 LifeX: Dispatch and First Contact  
Solution for Critical Control Rooms

2019\_00484

## HISTORY CHART

VERSION	DATE	CHANGED CHAPTERS	CAUSE OF CHANGE	AUTHOR
1.0	2019-04-12	All chapters	New Document	R. van Loo

Total number of pages: 33

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# 1 Introduction

## 1.1 Purpose of the Document

The Service Definition describes the possible G-Cloud deployment configurations, overview of the LifeX™ web client and a high level functional overview of the Frequentis 3020 LifeX™.

## 1.2 Target Group

The Feature List is intended for G-Cloud customers and Frequentis personnel as well as persons who need a brief overview of the 3020 LifeX™ features and characteristics.

Not all the described system functions may necessarily apply to a specific customer installation. The availability of a particular function depends on the local control centre environment, ordered version and the system configuration.

## 2 Frequentis 3020 LifeX™

The G-Cloud customer can choose from five LifeX™ service packages:

Package	Description
<b>Entry Radio</b>	Provides basic radio (Airwave and ESN) functionality and the capability to make and receive telephone calls
<b>Entry Radio and Contact Centre</b>	Extends the “Entry Radio” package to include advanced contact centre functionality for emergency call handling including ACD, IVR and EISEC integration
<b>Full Radio</b>	Extends the “Entry Radio” package to include resource management and location display on a map.
<b>Full Radio and Contact Centre</b>	Extends the “Full Radio” package to include advanced contact centre functionality for emergency call handling including ACD, IVR and EISEC integration
<b>Contact Centre</b>	Provides advanced contact centre functionality for emergency call handling including ACD, IVR and EISEC integration

In addition, the customer can choose to host the 3020 LifeX™ solution on a common “community” off-premise hosting platform or on an on-or off premise private cloud hosting platform. Note that the on-premise private cloud solution incurs additional service charges,

The following describes LifeX™ and which functionality is available in each package.

**Please note, that the feature lists and user interface designs are a snapshot at the time of writing and will grow and change with each (sub) release.**

### 3020 LifeX™ at a glance

- Pure software, IP-based communication and collaboration platform with an architecture designed for mission-critical operations
- Shared communication and information services with flexible network layouts
- Any media – any device. Horizontal data integration with easy-to-use, web-based user interfaces
- Linear scalability suitable for countrywide installations (start small – grow big), both in terms of seats and features
- Introducing LTE without changing known and trained user patterns, including cross-connection capabilities
- Open to other services, adapters and interfaces for different integration scenarios

3020 LifeX™ is a future-oriented critical communication and collaboration platform designed to satisfy all the demands of a next generation control room and its multimedia handling. Thanks to its sophisticated, modular architecture, 3020 LifeX™ can integrate a variety of systems using different protocols and can flexibly exchange or upgrade them without compromising ongoing operations.

### **Unique safety architecture**

The 3020 LifeX™ carrier-grade architecture is designed to meet the highest demands of mission critical use cases. The software seamlessly integrates with your existing IT infrastructure (on-premise, off-premise cloud). The resilient architecture makes 3020 LifeX™ scalable during runtime in a linear way, adding additional computing power as required by special operations.

### **Easy integration**

As 3020 LifeX™ is designed as an open platform. Other services and interfaces can be hosted on the same level as 3020 LifeX™ services. This ensures that data can be used horizontally across all business services. An open partner API enables other applications to utilise services, as well as data of the platform.

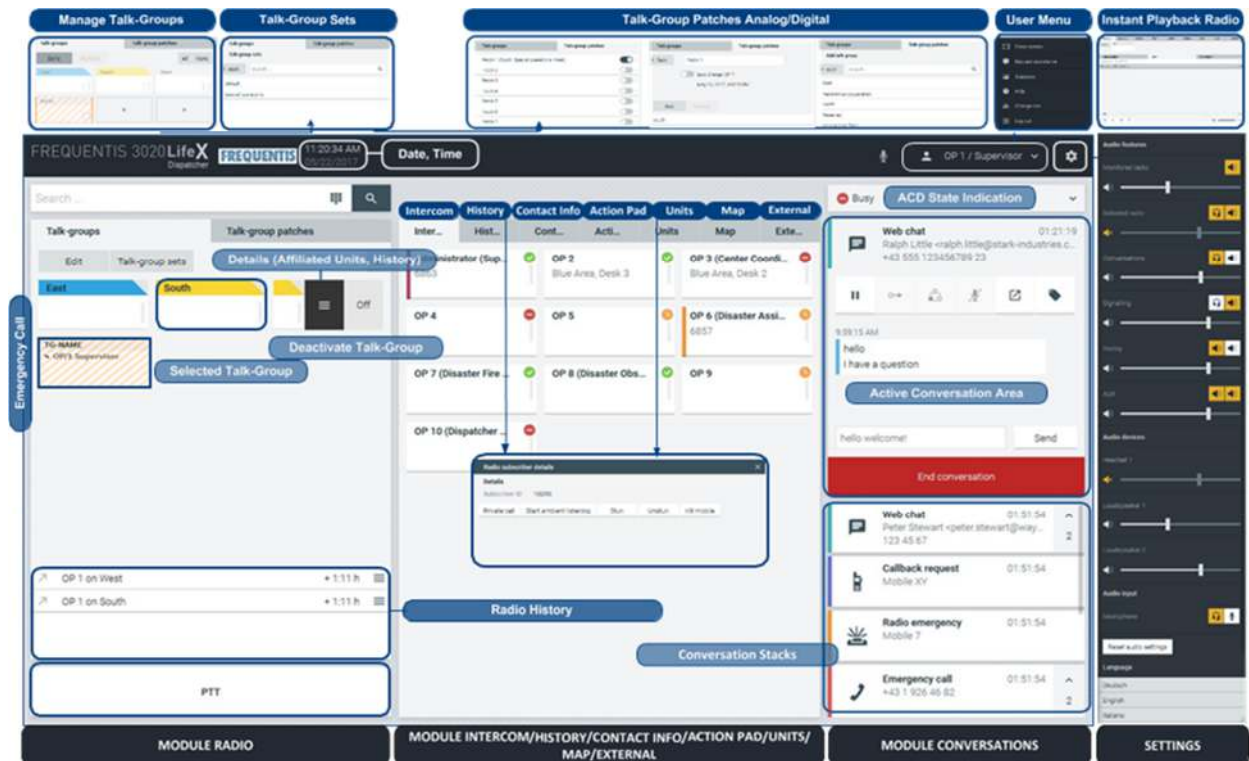
### **Dissolving control room borders**

For 3020 LifeX™, any device is a working position. The use of pure, web-based user interfaces and built-in flexible audio handling permit a broad range of different deployment scenarios on already installed infrastructure. Different gateways and the adapter concept allow seamless integration of different communication methods and technologies – for on-premise installations, data centre hosting, as well as hybrid scenarios.



*Illustrative 3020 LifeX client*

Availability/Scalability	Up to 99.99% for a single domain system / up to 1,000 working positions Live Upgrade (Blue/Green)
Standards compliance	SIP/RTP, SIPREC, ED137, TLS, Kerberos, XMPP
Phone interfaces	Supplied: PRI, BRI (T0), FXS, FXO, Supported: 3rd-party COTS IP voice gateways, e.g. CISCO, support of SBC
Radio connectivity	From 10 to 2,000 concurrent audio streams, integration with customer radio infrastructure via the Frequentis Universal Radio Gateway (URG) technology, Integration of LTE (ESN, eLTE, MCPTT)
Security Secure	communication based on TLS: SIPS, HTTPS, WebSocket secure
Recording interfaces	Integration of real-time voice and data recorders according to SIPRec. Replay of recordings via RTSP
Monitoring & logging	Using standard protocols (e.g. SNMP) to gather information about infrastructure, operating system, as well as virtualised products. Centralised log collection and processing, log analytics and visualisation



Annotated user interface overview

3020 LifeX Client	
General	Localisation
Operation Using Mouse and Keyboard	Multilingual User Interface
Operation Using Touch	English User Interface
Scalable User Interface	German User Interface
Login / Logout	Italian User Interface
Change Role	Language Selection at Login Time & during operation
Clean Display	<b>Audio Management</b>
Single Sign on	Support up to 5 USB devices per position
User Logout Prevention	Echo Cancellation
<b>General User Interface Modules</b>	Mute Microphone
Status Bar Module	Audio Settings (General and Operator specific)
Search Module	Audio device profiles
User Settings Module	Activate / Deactivate Audio Devices
Conversation Handling Area	<b>Audio Routing</b>
Conversation History	Smart Client Audio Routing
Help Page	Audio Safeguard
Contact Directory	<b>Chimes</b>
Action Pad	Configurable Chimes
	Incoming Conversation Chime
	Mute Chime
	Knocktone
	<b>Contact Management</b>
	Contact Management

*3020 LifeX™ core client functions*



### 3 Entry Radio Package

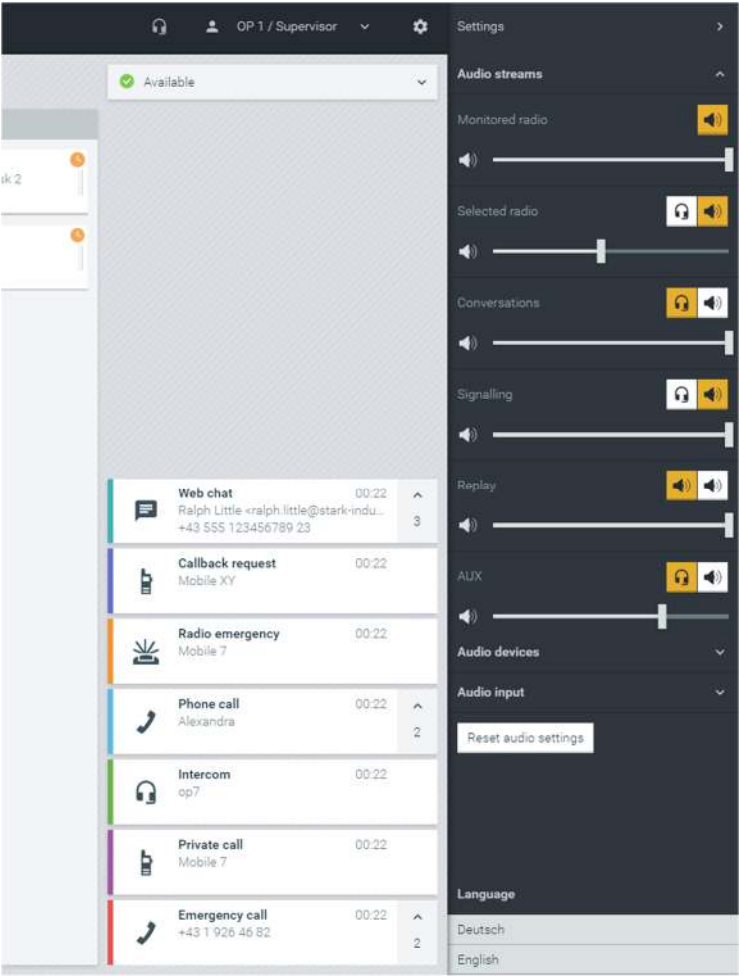
The Entry Radio package allows the customer to use Airwave and ESN radio for basic communication purposes which includes:

- including responding to Emergency activations,
- Airwave/ESN text messaging to/from radio mobiles,
- private calls,
- make/receive telephone and intercom calls with basic routing and
- cross connecting telephony with radio
- Radio subscriber management functions like DGNA, stun/kill (Airwave only)
- Instant record and playback facility for radio and telephony calls
- Configuration and logging/reporting functions
- Integration of internal websites

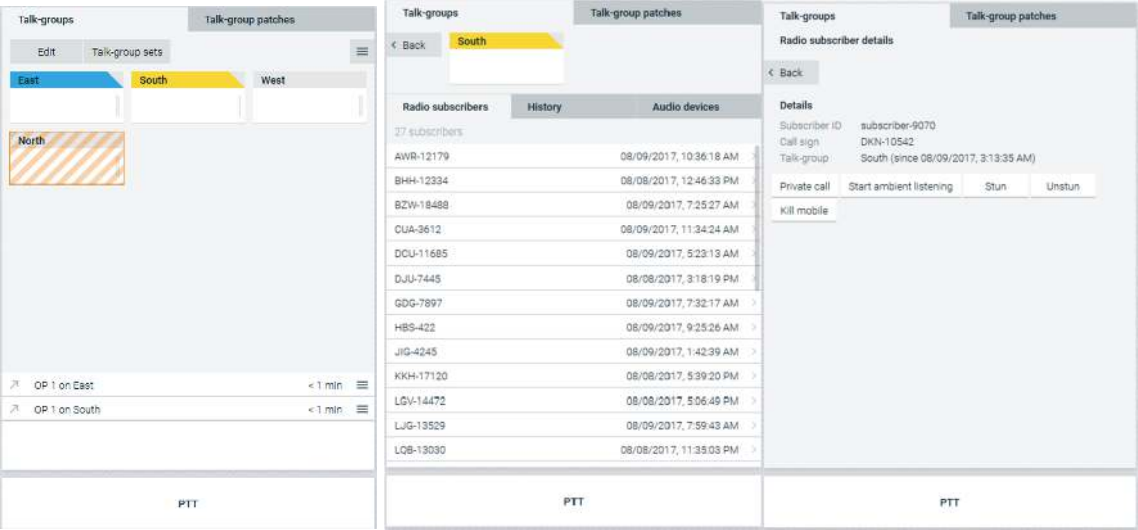
The 3020 LifeX™ solution connects to the current Airwave Dimetra 7.1.2 network, and from Q4 2018 will also connect to the newly proposed DCS doing away with the need to have Centracom or Vortex-based voice nodes. The proposed solution connects to ESN when available.

The solution applies an innovative new way of pooling Airwave and ESN resources resulting in minimised bandwidth consumption on the links to Airwave and ESN.

Radio and telephony audio are mixed to the available audio devices (USB headset, USB loudspeakers) and volume levels can be changed from within the client. Any setting is stored against the user when logging off and restored whenever the user logs on again -independent of the position logging onto.



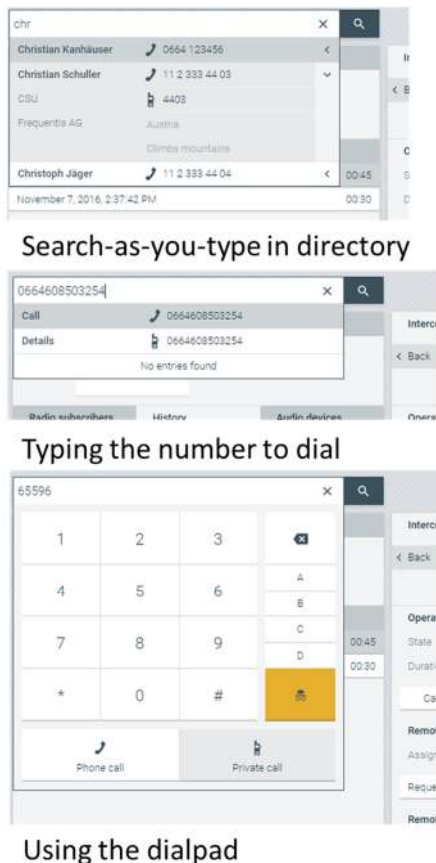
Slide-in settings panel



Radio Talk-Group Display with Radio History below, Affiliated Radio List and List Entry Details

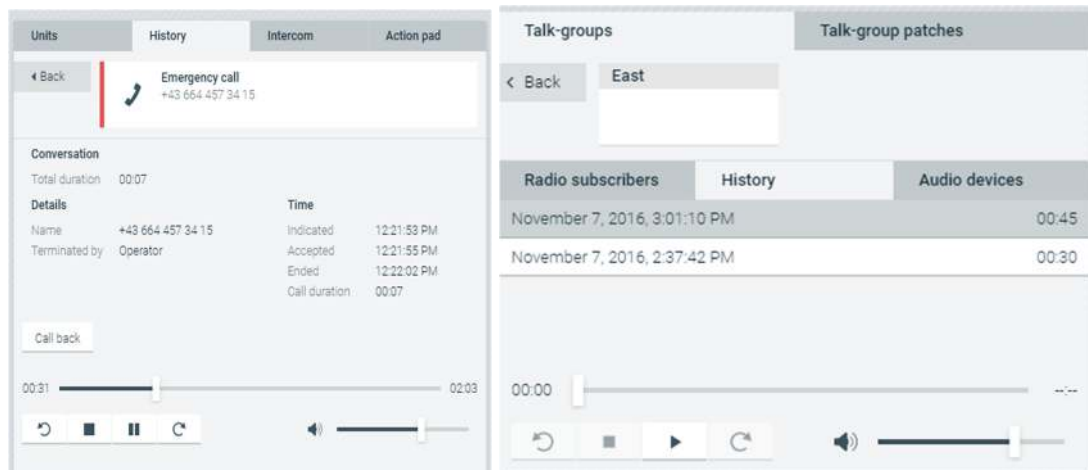
The grid visualises all talk-groups in a configurable sequence and the colours indicate the current talk-group status. The status can be changed individually per talk-group or globally for all talk-groups by clicking on the associated icon.

Basic Telephony functions are provided, where calls can be received and made. Multiple methods are available to initiate and outgoing call:



### Ways to set up outgoing calls

Each operator can also access an instant playback facility via the conversation and radio history. This facility is independent of the audit recording facility.



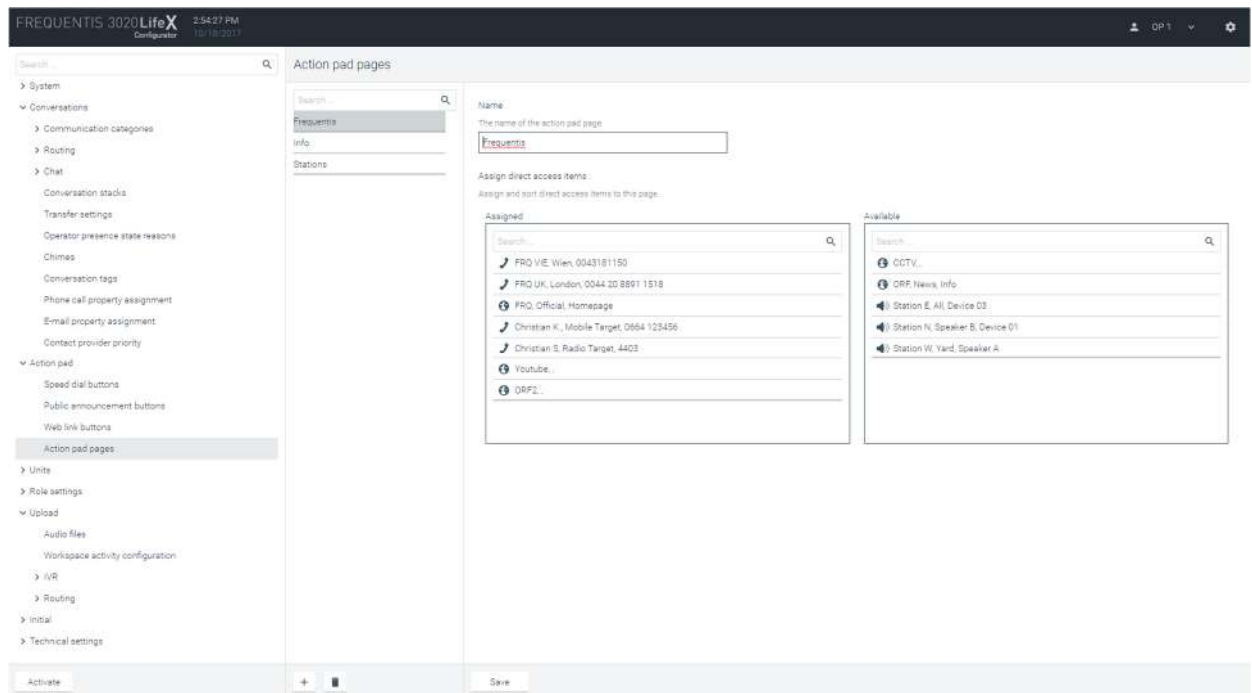
*Example of Replay from Conversation & Radio History*

Radio Voice	
General Radio	Radio Data
Radio Handling Area	General Radio Data
Radio History	Radio Handling Area
Talk-Group Management	Incoming / Outgoing Text Messages (Public Safety Messages)
PTT handling	Radio Data Services
Incoming talkburst indication (Squelch)	Status Messages - incoming/outgoing
Other operators transmission indication	GPS Message Handling
Talk-Group handling (idle/monitored/selected/out of service)	Group Membership Information (Affiliation Data)
Separate audio handling for monitored and selected talk-groups	Radio Subscriber Tracking
Radio Multiselect	Event Monitoring
Radio transmission in parallel to an active conversation	Digital Radio Emergency Services
Exclusive transmit for analogue radio channels	Enable and Disable Over the Air (Stun / Unstun)
Automatic Reconnect of talk groups in Selected/Monitoring State after failure (Re-Keying)	Kill Mobile
Neighbourhood Attenuation	Emergency (EMA) Call Handling
Sidetone Suppression	Radio Conferencing
Digital Radio	Radio Patch
Group Call	Radio Patch Information
Individual Call (Half-Duplex)	Group combine in the digital radio system
Talk-Group access management according role concept	Cross Connect
Transmitting party indication	
Call Back Request Workflow	
Visualisation of crypto information	

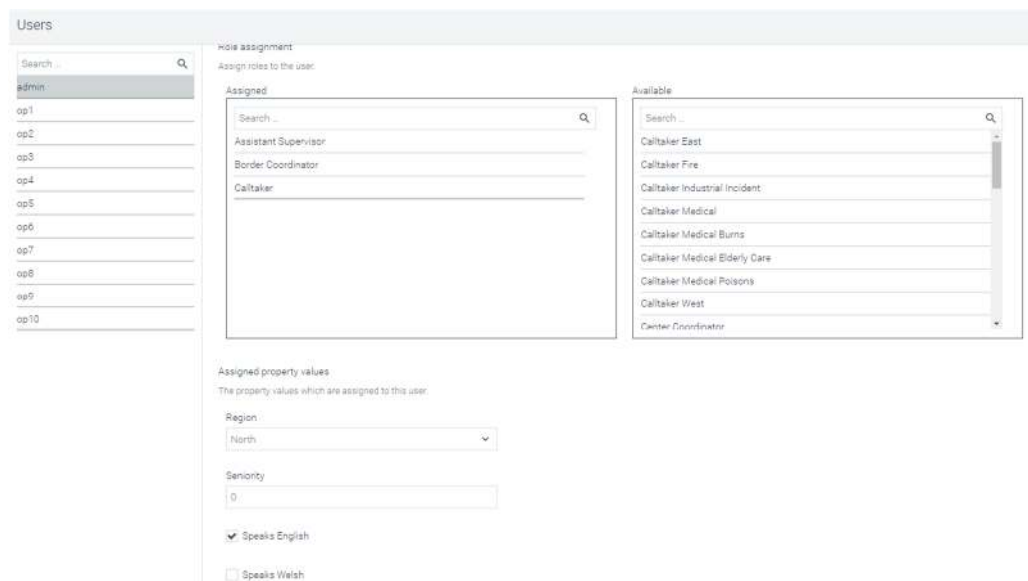
*3020 LifeX™ Radio functions*

## Configuration and logging/Reporting

The Frequentis 3020 LifeX™ is a highly flexible system and is configured using a web-based configuration tool.



### 3020 LifeX™ configuration Tool



### Roles to users, and user properties (used for routing) configuration

3020 LifeX Client: Configurator
Web-based User Interface
Applying Configuration changes at runtime
Operational Configuration
Technical Configuration
User, Role, OU, Tenant Configuration
Contact Management
User properties
Workspace configuration
Routing Configuration
User, Roles and Unit import

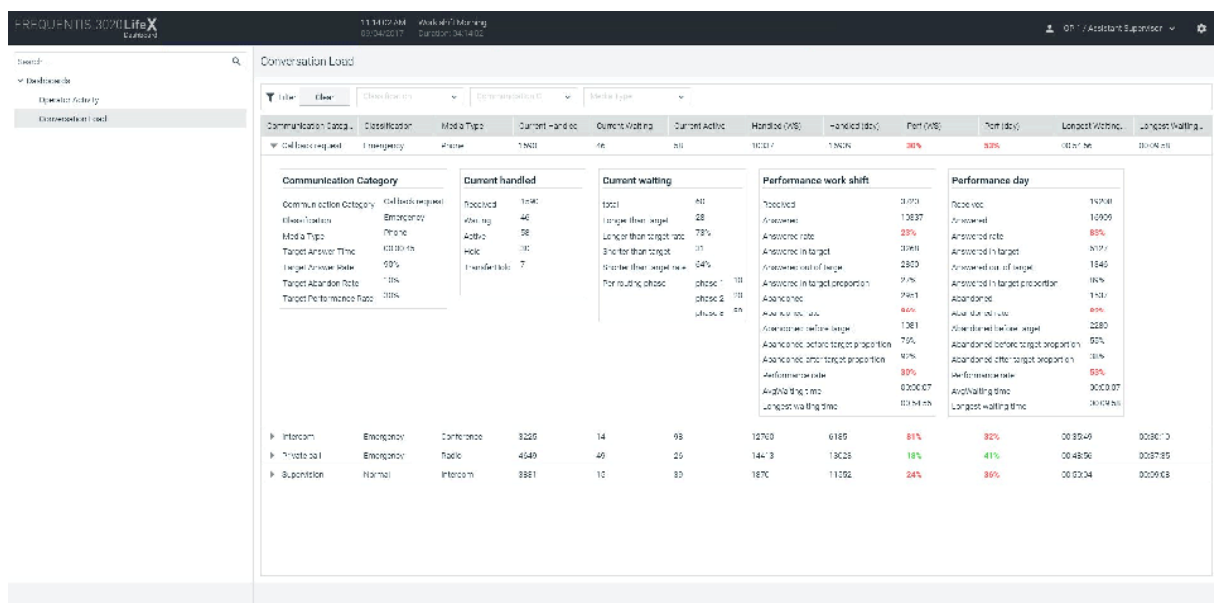
### 3020 LifeX™ Configuration functions

Central logging of all communication related events in the system is achieved with a custom file service logger generating log files in a component-wide standard log format.

Events logged are system internal events and any operator related event. Among other things logged are time of call setup (incoming and outgoing), how it was typed by the system (line, category, queue), routing decisions (initial, overflow routing) and times, EISEC and CLI information, which operator accepted it when at which terminal, when and why it was ended. Duration is then calculated based on start-end times.

The following tools are provided to access the logging and reporting functionality.

### Business Intelligence Dashboard



### 3020 LifeX™ Client: BI-Analytics, Web Dashboard

The system provides real-time data via dashboard functionality, so that a supervisor can be aware of the current ongoing tasks as well as the current load and performance within the control room. Using the available performance information, the supervisor can react and

perform changes to the current staffing, for instance to optimize the usage of internal resources or to add routing parameters to a call handler in case of high call load, etc.

## Management Information Reports

From

9/7/2017

To

9/12/2017

Operator Name

All

SiteId

0

View Report

<

>

2

of 3 ?

>

100%

Find | Next

Event Timestamp Date Time	Event Type	Workspace	Details
9/11/2017	No Role Changed	lx-w7-03	Login: op2 Operator: OP2 Workspace: lx-w7-03
9/11/2017	Operator Presence State Change	lx-w7-03	New ACD State: AVAILABLE
9/11/2017	Role Change	lx-w7-03	Login: op2 Operator: OP2 New Role: Supervisor Workspace: lx-w7-03
9/11/2017	Operator Presence State Change	lx-w7-03	New ACD State: ACD_READY
9/11/2017	Operator Presence State Change	UniqueWorkspaceToken_47ad45b7-5f75-4d09-a496-41e44900e5a7	New ACD State: AVAILABLE
9/11/2017	Operator Presence State Change	UniqueWorkspaceToken_bf09a3c7-1d95-4052-a590-72acade6c06a	New ACD State: AVAILABLE
9/11/2017	Operator Presence State Change	UniqueWorkspaceToken_38e969ac-f26c-4969-826b-b1fece7149f1	New ACD State: AVAILABLE

### Illustrative MIS report – Trend per Conversation Type

The system offers predefined reports that can be filled in with parameters by the user. Afterwards (e.g. for a defined time period like one day, one week), the report can also be exported in the CSV file format (for further processing in another tool, for example).

<b>3020 LifeX Client: Technical Analytics</b>
Centralised Logging incl. External Sources
Log management and analysis
Performance Data Analysis
Technical System Monitoring
Ad hoc Analysis & Visualisation
<b>3020 LifeX Client: Statistic Reports (MIS)</b>
Predefined Reports
Creation and Management of Reports
Run automated and manual Reports
Visual Representation of reports
Export of generated reports
<b>3020 LifeX Client: BI-Analytics Client</b>
Web-based control room overview
KPIs regarding radio load
KPIs regarding conversation load
KPIs regarding operator position load
Adding, Removing and Customising Widgets

### 3020 LifeX™ Login and Technical Monitoring functions

The solution provides a standard interface (the 3020 LifeX™ *Life* interface) for 3<sup>rd</sup> party systems to integrate with. Via this interface 3<sup>rd</sup> party systems can subscribe to radio and telephony events.



## 4 Entry Radio and Contact Centre Package

In addition to the Entry Radio Package, the Basic Radio and Contact Centre adds:

- Emergency and non-emergency contact handling using ACD, IVR and EISEC Integration, Webchat and email integration
- Teamwork facilities (eavesdrop, suggest, intervene, grab)

### Emergency and non-emergency contact handling

The system natively provides all required telephony functions and does not rely on separate PABX, ACD or IVR systems.

Frequentis' patented handling and routing of multi-channel events lies at the core of how we handle communication within the 3020 LifeX™ system. It is applied to incoming telephony calls, Airwave/ESN call back requests and private calls. When the system is expanded to handle web chat, social media chat requests or emails they will be routed using this mechanism as well. Both manual and forced-call acceptance modes of routing are configurable. Also, a mixed mode of operation is possible.

Emergency calls are provided to the active data centre via primary rate ISDN lines or SIP trunks. The assignment of an incoming call based on these attributes to a category of calls is configurable:

Then using routing rules, the system matches attributes and routes calls to the best matching users wherever they are sitting:

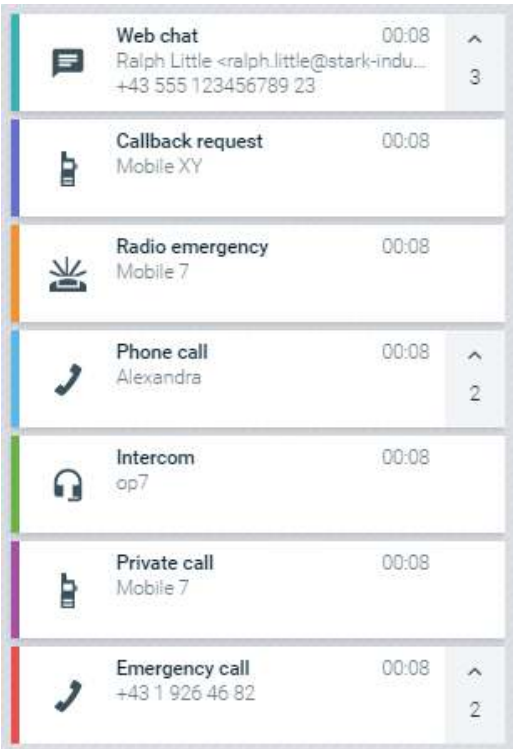
In case initial users are busy/out of ACD several escalations of call routing can be configured.

Supervisors can have access to a facility where skills (properties) of operators can be changed which affects immediately the routing engine and the calls routed to operators.

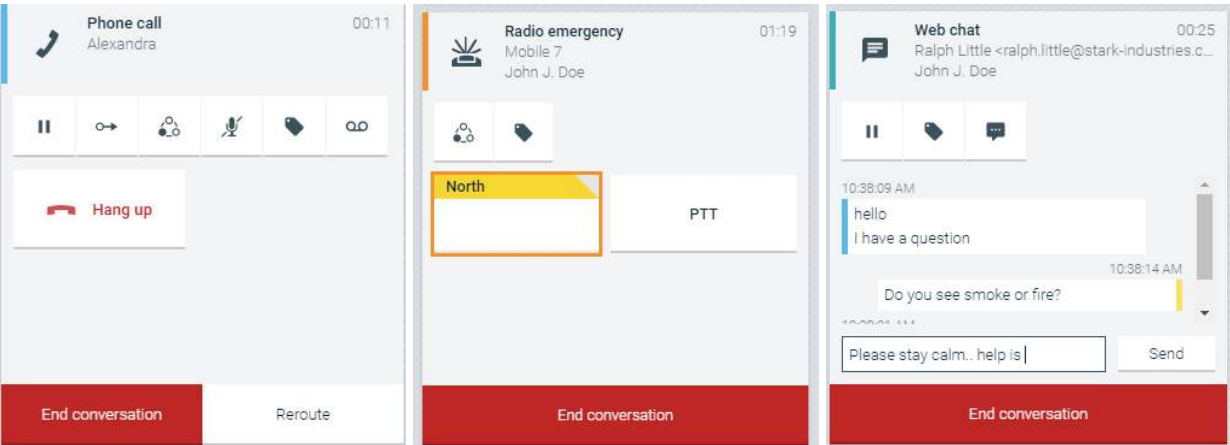
*Illustrative changing user properties*

This –and the routing scenarios taking into account load and availability of users- makes obsolete the necessity for the operator to add or remove call types.

Incoming calls are presented as notification and depending on the type of call the user interface provides the available functions.



Illustrative incoming conversations



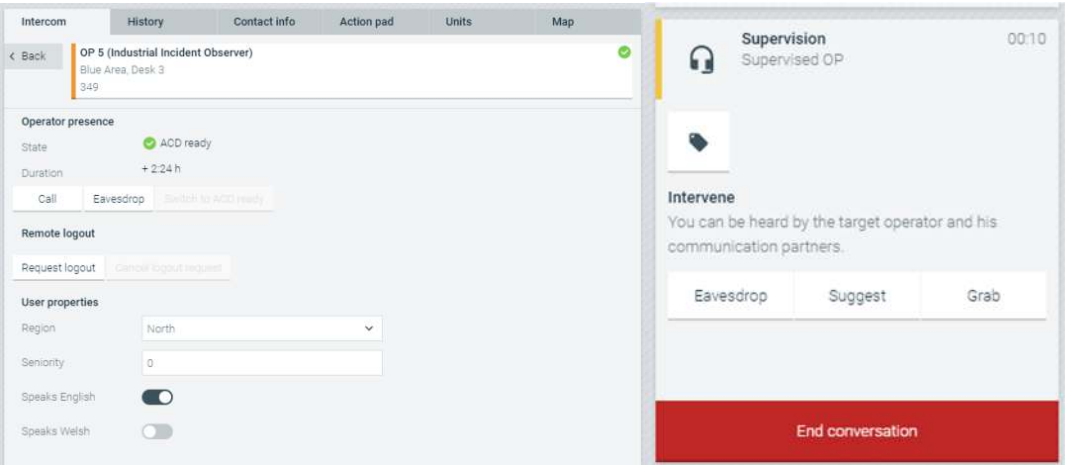
Active Conversations (Examples)

Telephony	
User Interface Modules	Conversation Hold
Conversation Handling Area	Local Hold
<b>General Conversation Handling</b>	Announcement on Hold
Unified media handling in Conversations	Auto-Hold
Incoming / Outgoing Calls	Toggle Calls
Configurable outgoing CLIP per Role	<b>Conversation Transfer</b>
Waiting Conversation Stacking	Supervised transfer
Accept waiting Conversation (Accept next & Cherry picking)	Unsupervised transfer
Display Number of waiting Conversations	Rerouting of unanswered unsupervised transfer
DTMF Post Dialling	<b>Conversation Information</b>
Communication Categories	Additional information from internal contact directory
<b>Conversation History</b>	Displaying information from external contact sources (e.g. contact directory, contact history, past events)
Persistence across user sessions	<b>Emergency Telephony</b>
Global Callback Indication	Fault tolerant handling of emergency conversations
<b>Conversation Routing</b>	Conversation Priorities
Routing of incoming conversations to position and role	Displaying additional emergency related data
DDI (Direct Dial In)	<b>Advanced Routing</b>
Call Forward	Property based routing (operator skills, regions)
<b>Conversation Conference</b>	Alternative Conversation Routing
Up to 6 active participants per conference	Trigger rerouting of conversations
Up to 4 Simultaneous conferences per operator position	Operator status routing
Conference handling (add, remove, hold, end)	Time-based routing
Speaking party indication	Routing strategy (Group, Longest idle first / Least busy)
Conference briefing mode	Whisper Announcement
Audible indication during conference	Wrap-up reasons
	Not ready code
	Easy exchange of predefined routing processes
	Frequent Caller Detection
	Interactive Voice Response (IVR)
	Forced Call Acceptance
Messaging	
Send / Receive text messages	
Text Chat	
Support of Multiple Chats	
Canned Messages	
Email Handling	
Routing of text message conversations	
Conversation History	
Chat Transcript	

### 3020 LifeX™ Conversation and Emergency Call Management functions

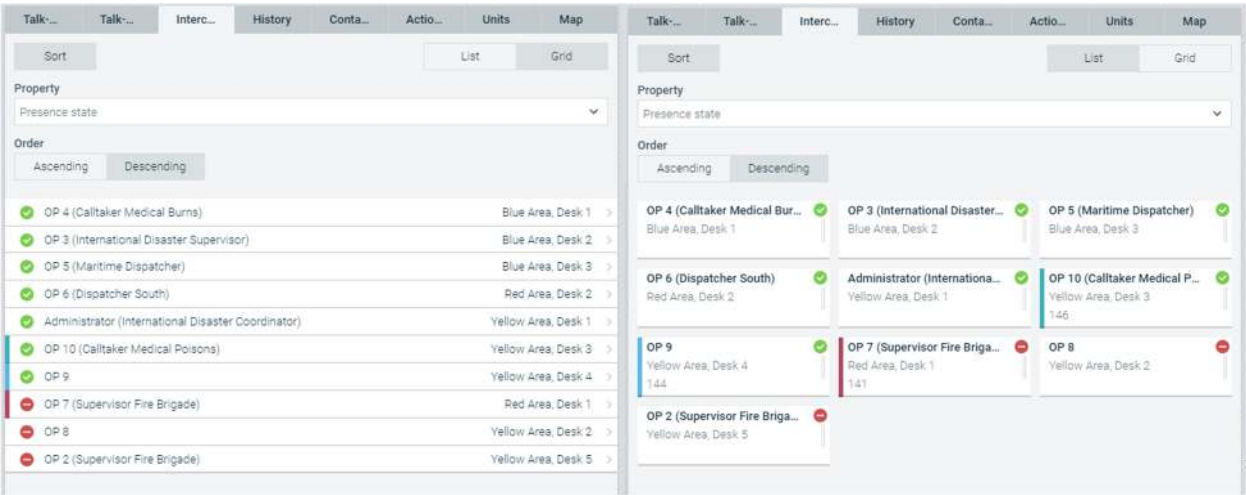
## Teamwork Features

The system provides functions which enable the user to request assistance. A supervisor can connect to the operator position and monitor calls (“Eavesdrop”). The supervisor can also give helpful tips to the requester without the other subscriber hearing this (“Suggest”), can enter into a three-way conference (“Intervene”). The conversation can be taken away so that only the supervisor is talking to the caller (“Grab”).



*Intercom List Details – User properties, Intervening in an active call*

The solution provides an Intercom list or grid, where information regarding other operator status and ongoing conversations are displayed.



*Illustrative Intercom list mode (left) or grid mode (right)*

Teamwork
<b>Intercom</b>
Intercom List
Intercom Filter
Operator presence state
Intercom operator details
Internal communication between operators
<b>Global Conversation History</b>
Global Conversation History
<b>Supervisory Functionality</b>
Request Assistance
Eavesdrop
Suggest
Intervene
Remote position control
Remote position view
Remote role control (logoff, role change, property change)
Grab conversation
Remote Wrap-Up Control

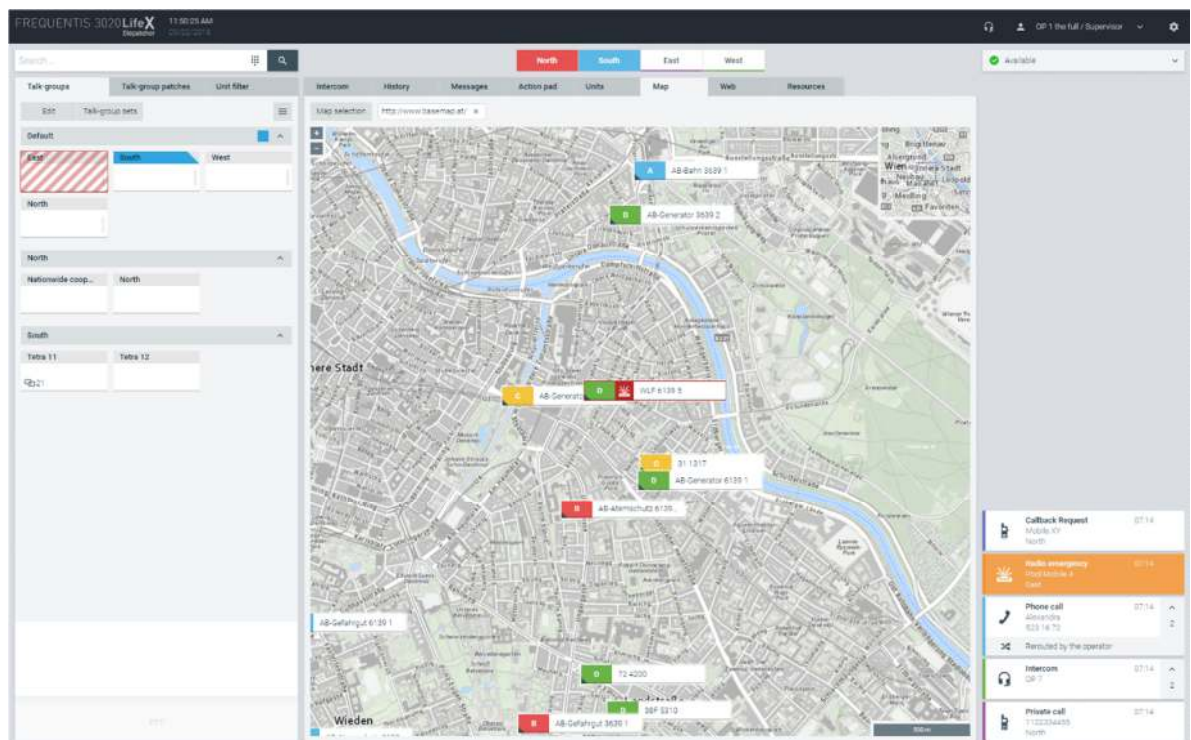
### *3020 LifeX™ Teamwork functions*

## 5 Full Radio Package

In addition to the Entry Radio Package, the Full Radio Package adds:

- Integration with available mapping
- Manage resources
- Display location on map, follow resource on map

Users require more and more geo-spatial data and information about the current position and status of field-resources in real-time. In the 3020 LifeX™, a map-centric user interface can be provided to each role of a control room.

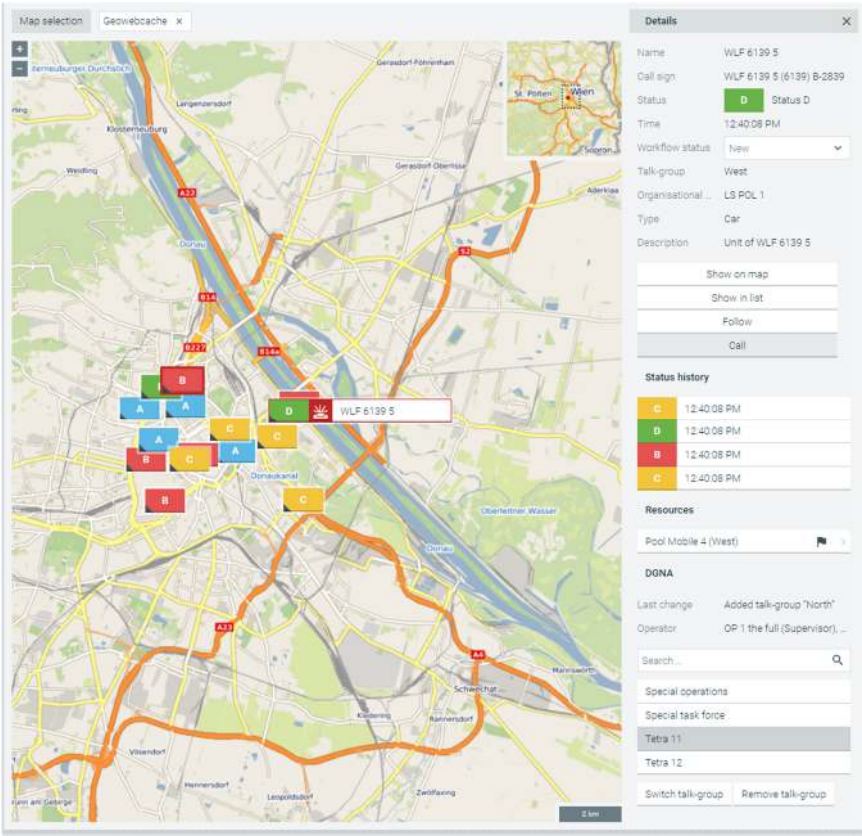


*Map-Centric User Interface with location information*

To avoid further investments, the existing customer's GIS can be used and integrated. Thus, the already known maps will be used uniformly in all systems. The position of moving items is updated as soon as additional location information is available to the system without reloading the website.

The maps are periodically updated. For each map visible on the client, the system stores the last setting made by the user regarding which map layers are visible (if, e.g., the roads layer was visible, or the resources layer), map extent and zoom level. This setting is automatically recalled at the next log-on. The system displays the system maintained object layers and other geo data based layers.

This Resource Management function allows for grouping of radio mobiles into units/Resources and the displaying of unit/resource location and status on the map. It also allows to start private and group calls from the map to specific resources.



Resource Details and access to functions

Map	Resource Management
Map	Resource Management Area
Map-centric User Interface	Grid / List View
Objects on map	Resource Map View (requires Map-Module)
Incoming conversations	Status Messaging
Emergency Indication	Status Colour-Codes
Units	Resource Location Update (Tracking)
Interactions	Status and Location History
Map Navigation (Pan/Tilt/Zoom)	Resource Teaming (Units)
Fly-to Object	List filtering and ordering
Corresponding Context Actions	Resource Search

3020 LifeX™ Mapping and Resource Management functions



## 6 Full Radio and Contact Centre Package

In addition to the Full Radio Package, the Full Radio and Contact Centre adds:

- Emergency and non-emergency contact handling using ACD, IVR and EISEC Integration, Webchat and email integration
- Teamwork facilities (eavesdrop, suggest, intervene, grab)

### Emergency and non-emergency contact handling

The system natively provides all required telephony functions and does not rely on separate PABX, ACD or IVR systems.

Frequentis' patented handling and routing of multi-channel events lies at the core of how we handle communication within the 3020 LifeX™ system. It is applied to incoming telephony calls, Airwave/ESN call back requests and private calls. When the system is expanded to handle web chat, social media chat requests or emails they will be routed using this mechanism as well. Both manual and forced-call acceptance modes of routing are configurable. Also, a mixed mode of operation is possible.

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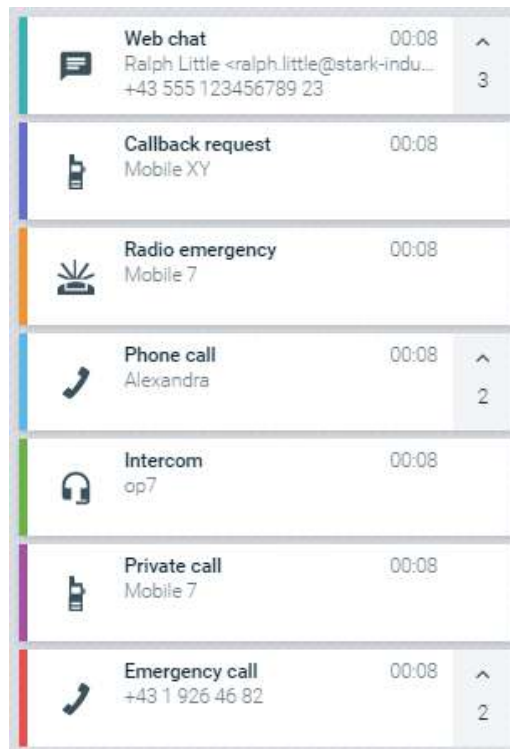
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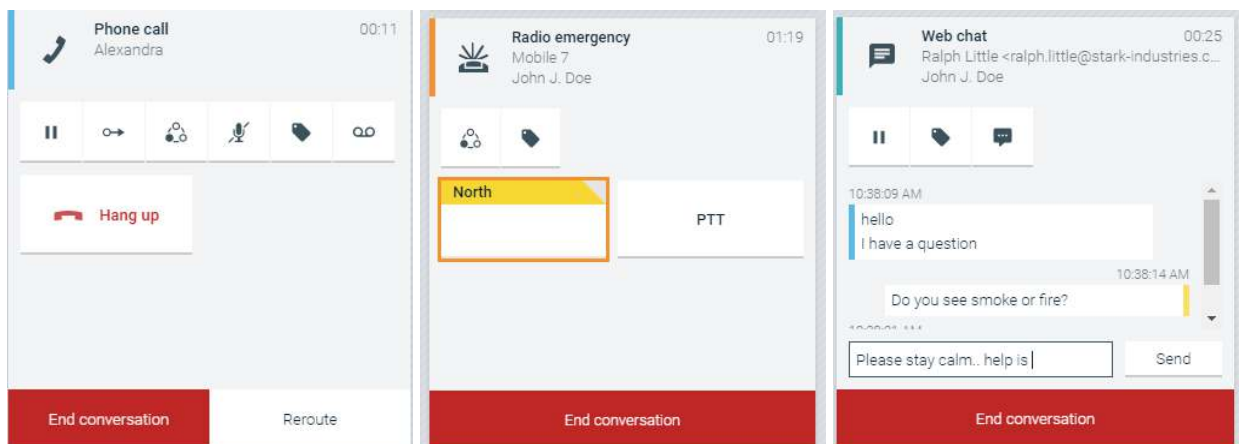
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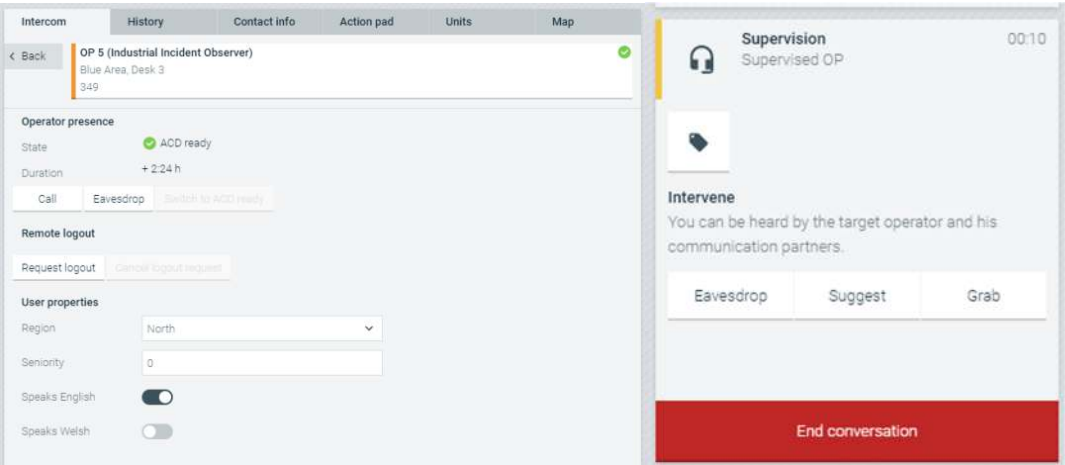
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Chat Transcript	

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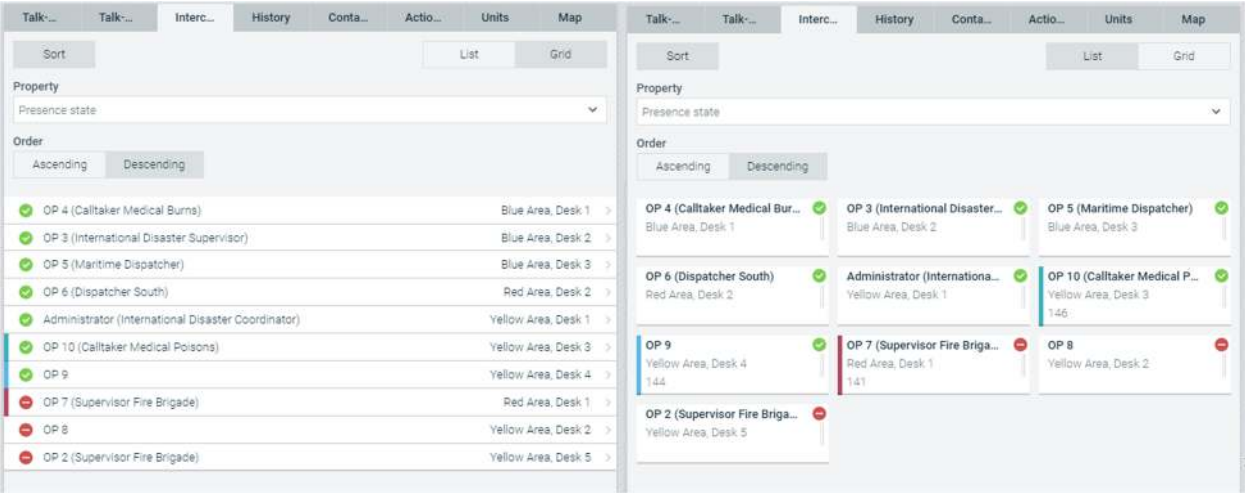
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Intercom operator details
Internal communication between operators
Global Conversation History
Global Conversation History
Supervisory Functionality
Request Assistance
Eavesdrop
Suggest
Intervene
Remote position control
Remote position view
Remote role control (logoff, role change, property change)
Grab conversation
Remote Wrap-Up Control

3020 LifeX™ Teamwork functions

## 7 Contact Centre

Contact Centre provides:

- Emergency and non-emergency contact handling using ACD, IVR and EISEC Integration, Webchat and email integration
- Teamwork facilities (eavesdrop, suggest, intervene, grab)

### Emergency and non-emergency contact handling

The system natively provides all required telephony functions and does not rely on separate PABX, ACD or IVR systems.

Frequentis' patented handling and routing of multi-channel events lies at the core of how we handle communication within the 3020 LifeX™ system. It is applied to incoming telephony calls, Airwave/ESN call back requests and private calls. When the system is expanded to handle web chat, social media chat requests or emails they will be routed using this mechanism as well. Both manual and forced-call acceptance modes of routing are configurable. Also, a mixed mode of operation is possible.

Emergency calls are provided to the active data centre via primary rate ISDN lines or SIP trunks. The assignment of an incoming call based on these attributes to a category of calls is configurable:

Then using routing rules, the system matches attributes and routes calls to the best matching users wherever they are sitting:

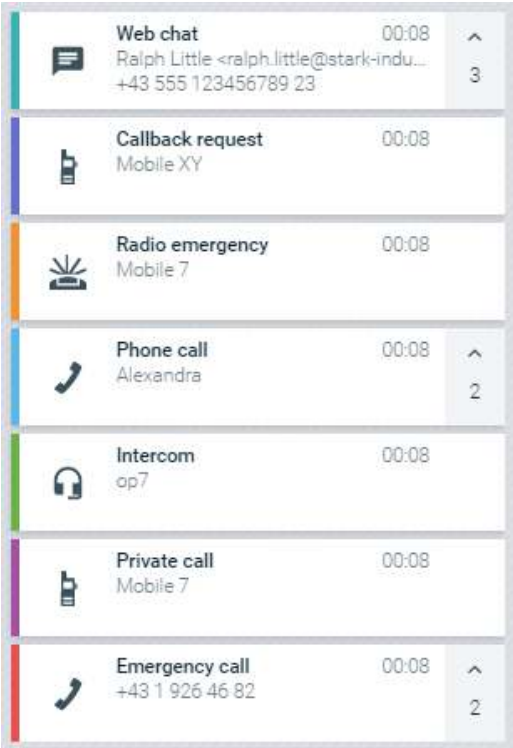
In case initial users are busy/out of ACD several escalations of call routing can be configured.

Supervisors can have access to a facility where skills (properties) of operators can be changed which affects immediately the routing engine and the calls routed to operators.

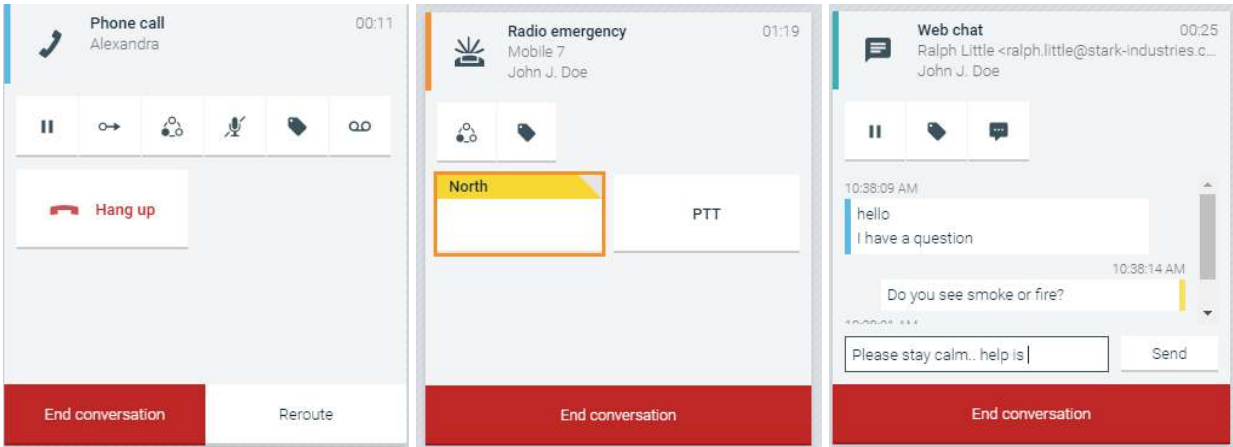
*Illustrative changing user properties*

This –and the routing scenarios taking into account load and availability of users- makes obsolete the necessity for the operator to add or remove call types.

Incoming calls are presented as notification and depending on the type of call the user interface provides the available functions.



Illustrative incoming conversations



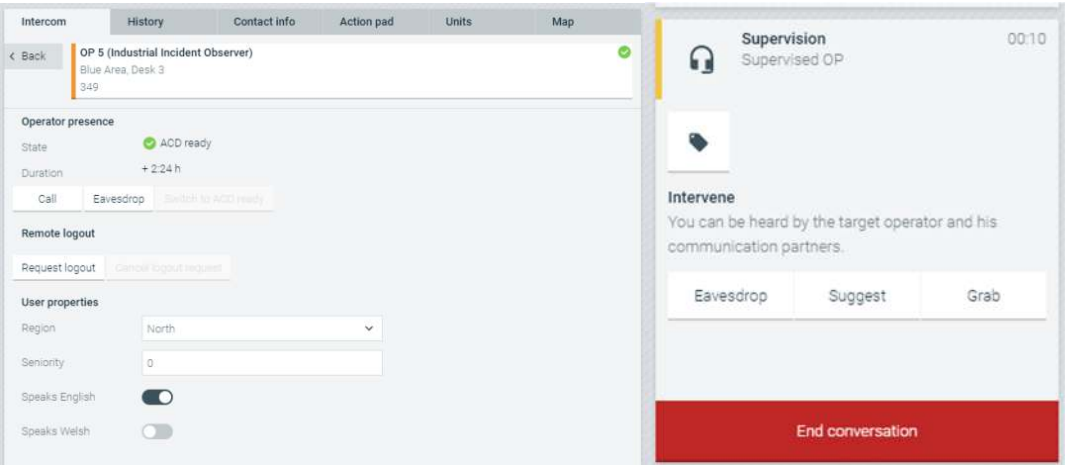
Active Conversations (Examples)

Telephony	
User Interface Modules	Conversation Hold
Conversation Handling Area	Local Hold
<b>General Conversation Handling</b>	Announcement on Hold
Unified media handling in Conversations	Auto-Hold
Incoming / Outgoing Calls	Toggle Calls
Configurable outgoing CLIP per Role	<b>Conversation Transfer</b>
Waiting Conversation Stacking	Supervised transfer
Accept waiting Conversation (Accept next & Cherry picking)	Unsupervised transfer
Display Number of waiting Conversations	Rerouting of unanswered unsupervised transfer
DTMF Post Dialling	<b>Conversation Information</b>
Communication Categories	Additional information from internal contact directory
<b>Conversation History</b>	Displaying information from external contact sources (e.g. contact directory, contact history, past events)
Persistence across user sessions	<b>Emergency Telephony</b>
Global Callback Indication	Fault tolerant handling of emergency conversations
<b>Conversation Routing</b>	Conversation Priorities
Routing of incoming conversations to position and role	Displaying additional emergency related data
DDI (Direct Dial In)	<b>Advanced Routing</b>
Call Forward	Property based routing (operator skills, regions)
<b>Conversation Conference</b>	Alternative Conversation Routing
Up to 6 active participants per conference	Trigger rerouting of conversations
Up to 4 Simultaneous conferences per operator position	Operator status routing
Conference handling (add, remove, hold, end)	Time-based routing
Speaking party indication	Routing strategy (Group, Longest idle first / Least busy)
Conference briefing mode	Whisper Announcement
Audible indication during conference	Wrap-up reasons
	Not ready code
	Easy exchange of predefined routing processes
	Frequent Caller Detection
	Interactive Voice Response (IVR)
	Forced Call Acceptance
Messaging	
Send / Receive text messages	
Text Chat	
Support of Multiple Chats	
Canned Messages	
Email Handling	
Routing of text message conversations	
Conversation History	
Chat Transcript	

### 3020 LifeX™ Conversation and Emergency Call Management functions

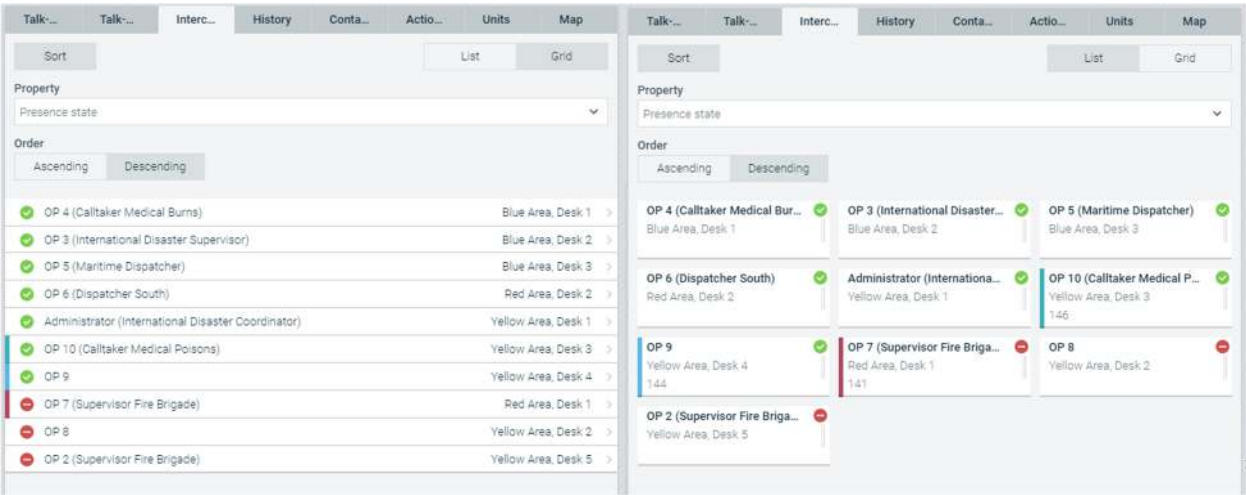
## Teamwork Features

The system provides functions which enable the user to request assistance. A supervisor can connect to the operator position and monitor calls ("Eavesdrop"). The supervisor can also give helpful tips to the requester without the other subscriber hearing this ("Suggest"), can enter into a three-way conference ("Intervene"). The conversation can be taken away so that only the supervisor is talking to the caller ("Grab").



*Intercom List Details – User properties, Intervening in an active call*

The solution provides an Intercom list or grid, where information regarding other operator status and ongoing conversations are displayed.



*Illustrative Intercom list mode (left) or grid mode (right)*



Teamwork
<b>Intercom</b>
Intercom List
Intercom Filter
Operator presence state
Intercom operator details
Internal communication between operators
<b>Global Conversation History</b>
Global Conversation History
<b>Supervisory Functionality</b>
Request Assistance
Eavesdrop
Suggest
Intervene
Remote position control
Remote position view
Remote role control (logoff, role change, property change)
Grab conversation
Remote Wrap-Up Control

*3020 LifeX™ Teamwork functions*