eurofunk
news
ISSUE
№ 05

EMERGENCY CALL: THE NEXT GENERATION

MOBILE RESOURCE SERVICES

Expect these and other fascinating subjects in this issue of eurofunk news

BERLIN, HERE WE COME

A control center project of the highest order

GRAND OPENING

Innovation Office in Salzburg – where safety is created

EMERGENCY CALL AI

An inside look at a eurofunk research project

New standards, a new office and a project of the highest order

With the move to **IP technology** that occurred over the course of last year, control centers saw a jump in technological innovation. Proven reliable and with no comparable alternative, it has become clear that IP technology will be indispensable even in critical areas such as the processing of emergency calls. Following several announcements by network operators and the resulting migration delays, the switchover ultimately went smoothly for most control centers.
By mid-2021, almost all emergency call handling control centers in Germany had migrated to IP, the majority by connecting to **modern IP-capable emergency call handling systems** that can process IP protocols and IP voice data directly. Older systems that could only handle ISDN protocols were supplemented by intermediate converters. In most cases, the feed is via redundant line paths ensuring a reliable and enduring connection to the public network for many years to come.
Today, the nationwide emergency call connection can transmit **not only voice signals**, but increasingly, **data** for everything up to and including **video signals** as well.

The introduction of the **NORA nationwide emergency call app** gives a good indication of future information transmission in emergency situations. In a first phase, this application will be available for download for cell phones. Unfortunately, an interface to control center dispatch systems is not planned until a later phase; the dialog with the person seeking help and the accompanying data are initially only available on separate screen pages in the control centers and must be transferred manually to the command and control system. This is acceptable as a short-term restriction only and we hope to be able to eliminate it quickly.

eurofunk already provides its customers with **web-based solutions** and **mobile applications via broadband mobile communications**. The ability to transmit information quickly and without errors to the mobile emergency services and to transfer data from the scene of the incident back to the control center will result in a significant increase in operational efficiency.

Another news article is dedicated to the expansion and re-opening of the new eurofunk **Innovation Office in Salzburg**. The increase in office capacity from 25 to 80 people and the new, modern premises fulfil all the requirements of a contemporary, innovative tech company.

We are particularly pleased about having been awarded the **Cooperative Control Center Berlin** project, which represents a milestone in the eurofunk's history. After an extensive negotiation process with the project group of the Berlin police and fire department followed by a one-and-a-half-year delay in being awarded the contract, it is finally time to get to work!

We hope you enjoy reading more about these and other topics in this issue of the eurofunk NEWS!

Dr. Christian KAPPACHER – Managing Director

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A Control Center Project of the Highest Order

July 2021: eurofunk realizes Germany greatest control center project, the Cooperative Control Center Network for integrates the State of Berlin's fire department, rescue services and police force.

Stefan HUTTER

BERLIN – A CITY FULL OF CONTRASTS

The metropolitan region of the country's capital encompasses an area of about 890 square kilometers and has a population of more than 6 million. Berlin's popularity as a tourist destination draws a further several hundred thousand guests to the city every day. Add this to a highly complex topology with more than 1700 bridges and public safety becomes a Herculean task for Berlin's Fire Department and Police Force. With over 1.4 million calls to the police and 1.1 million more to the fire department, the yearly quota of emergency incidents reaches well over a million. Currently, the response of the police and fire services is coordinated by just over 400 employees in rotating shifts in each of the control centers. However, with the rising number of emergency calls and an increasing complexity in the types of threats, calls for better cooperation between the organizations have been growing.

Against this backdrop, a project group called the **„Cooperative Control Center"** was founded in 2012. Its job was to evaluate the introduction of uniform IT procedures for both organizations in the areas of mission control and communication technology. The result was a tendering procedure for a cooperative network including one control center each at police and fire department locations and a total of approx. 200 workstations. A key feature of the new system is, among other things, the cross-organizational use of a high-availability hard and software platform for systemized caller interrogation, radio handling, incident dispatching and processing incl. geographic location system, situation and command management and much more. Ergonomic control center workstations, situational display media technology and voice documentation are also part of the project as is extensive operational support and the integration of the many existing technical systems and their interfaces.

The new control center network is to ensure seamless operational cooperation. To achieve this eurofunk will be taking advantage of the cloud and its many benefits and providing maximum system availability through the implementation of system redundancy and multiple control center locations. „The new system will allow the two control centers to be in direct communication during incidents involving both the fire services and the police force", says Thomas Schnitzer, project →

manager for the Berlin police. In the event of a threat or the destruction of a site's technology, dispatchers from the affected control center can also occupy the workstations of the partner control center. This free-seating concept also ensures mutual support in high-load situations.

4-YEAR AWARD PROCESS

The award procedure itself was preceded by several years of tender evaluation together with submissions involving the specification of services and an evaluation catalog.
In the first phase, suitability was assessed through a bidding competition. In the second phase, indicative bids were solicited which, in conjunction with proposed changes, were allowed to deviate from the original specifications. These indicative bids were evaluated in a process that lasted almost a year with each bidder participating in several full-day negotiations. This also gave the client the opportunity to improve their specifications using the information collected in the process.
Proposals were evaluated according to an established and objective procedure and assessed in relation to price. The evaluation catalog itself comprised more than 4,000 items and included such categories as functional requirements, system architecture, infrastructure, innovation, testing and training, migration, operational services, as well as project management and project execution. At the end of this complex awarding process, eurofunk was able to establish itself as the clear winner. Not even a review procedure, which was initiated by a competing bidder against the State of Berlin for procedural reasons and a resulting project delay of about one and a half years, could change the positive outcome for eurofunk.

»The new system will allow the two control centers to be in direct communication during incidents involving both the fire services and the police force.«

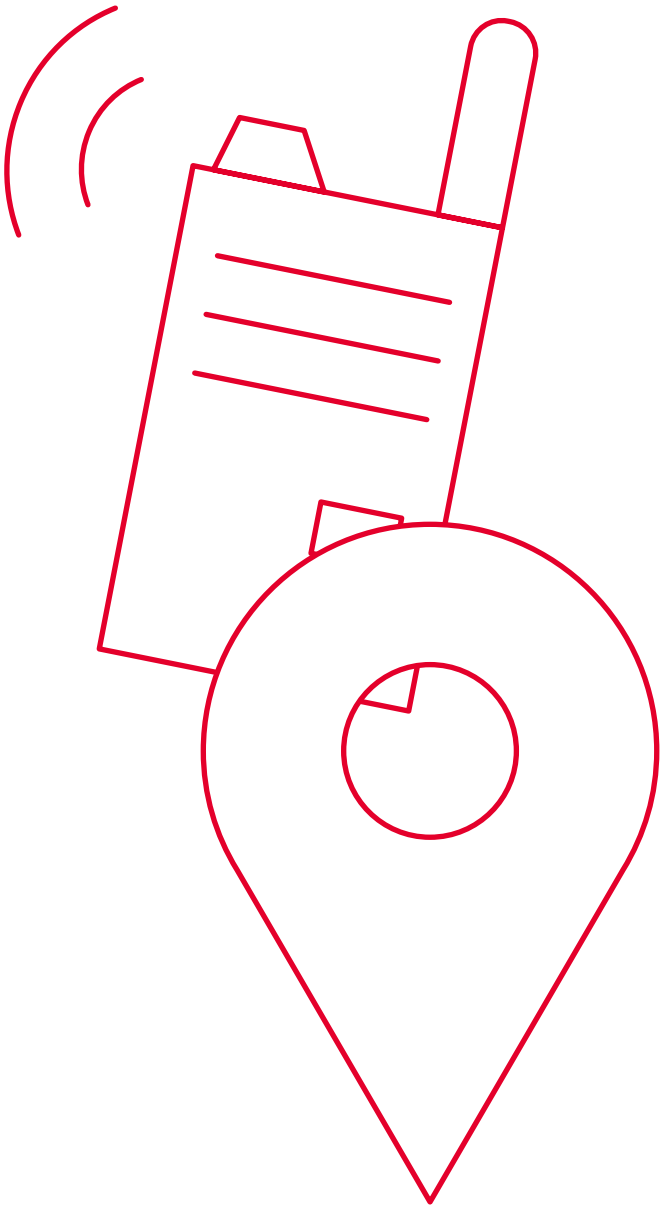
Thomas SCHNITZER,
Berlin Police Project Manager

The Cooperative Control Center Berlin is one of the largest control center projects ever awarded in Germany. For eurofunk, this is a significant milestone in the company's history. We would like to express our sincere gratitude to the State of Berlin, the fire department and the police for placing their trust in us and look forward to the joint realization of this significant project!

Radio, positioning, and status servers for German BOS control centers

Stefan HUTTER

In August 2021 the German Ministry of the Interior, Construction and Home Affairs awarded eurofunk a project for the delivery of radio, location and status servers.



The purpose of this system solution is to expand the dislocated concentrator sites of the BOS digital radio network to include uniform and highly available radio data transmission, location and status services for BOS control centers. Included in the network are control centers of the Federal Customs Administration, the Federal Criminal Police Office, the Federal Office for the Protection of the Constitution, the Federal Office for Goods Transport, the Federal Agency for Technical Relief, the German Bundestag and the Federal Police. These organizations coordinate around 200,000 BOS digital radio subscribers at over 500 workstations distributed across approx. 170 control center locations.

With its innovative design and high availability, this server solution is connected via the standardized BOS digital radio gateway interface (digital radio connector). The services provided are typically used by the dispatch systems of the control centers which manage the resources of their organization. The system is supplemented by optionally retrievable, control center-specific visualization servers, which receive data from the central system and make it available to browser-based workstations. This functionality is available even without a command and control system.
Based on user and authorization, emergency personnel and callers are visualized on geographic maps - in real time and precisely positioned - by means of Rescuetrack embedded software. Data transmissions, including those in connection with group alarms, are selective and position-specific.

The realization will be carried out in accordance with the requirements of the BDBOS Act (BDBOSG), the order of the Federal Agency for Digital Radio of the BOS (BDBOS) and the Federal Office for Information Security (BSI). The range of services is rounded off by comprehensive maintenance and service support as well as a guarantee of sustainable and innovative system development. This is related to a potential integration of the radio messaging system FMS 2.0 of the German Professional Mobile Radio Association PMeV.

We would like to thank the client's project team for the trust they have placed in us and look forward to implementing this groundbreaking solution countrywide!!

eDESK Fire – Fire Department Operations Desk

Christina DAVID

The radio control desk for volunteer fire departments

The eurofunk Fire Department Operations desk was developed specifically for the needs of volunteer fire departments. Compact and visually appealing, the radio center desk has an ergonomic design. The table size is customizable. The height adjustment function helps dispatchers to avoid fatigue during long incidents by allowing for a change in position from sitting to standing and vice versa. The eDESK Fire series employs only the highest quality materials in its construction.

The desired components are planned and installed in a coordinated deployment console. A eurofunk database for built-in devices provides the necessary dimensions for integrating the existing equipment. This ensures quick and easy preparation of the module panels. Should the installation of additional devices be required at a later date, an extension can be implemented quickly and cost-effectively by means of a construction plan or sample.

The eDESK Fire is the hardware for the fire station's „control and command center". With its user-friendly arrangement and simple user interface, each desk can be individually adapted to the requirements of the customer.

THE RADIO CONTROL SYSTEM LARDIS FOR THE eDESK FIRE

eurofunk is partnered with LARDIS, a radio control system that can turn your eDESK Fire into a universal communication center. This radio control system has established itself on the market primarily with the simple and straightforward operation of TETRA radios.
From us for you – everything from a single source!

Highlights

- Size of the table variable from 1.8 m-2.8 m
- Support frame made of robust aluminum strut profiles
- Variable desk width from 1 TE (108 mm) to 25 TE (2700 mm)
- Torsion-resistant aluminum profile table construction with tubular steel base frame
- Body for technology incl. service opening in the footwell (possible integration of computer and electronics in the body)
- Mechanical tilt adjustment of the LARDIS touch screen
- Cable routing through cable tray and permanently installed power supply
- Variable console attachments for simple conversions and quick service
- Individual color design
- Cable-friendly Igus E26 energy chains
- USB module and CAT connection panels in the console superstructure or on the back of the console

Find more details and equipment options in our product information. Feel free to contact us!

Innovation meets modern atmosphere

Renovation and Expansion of the Innovation Office Salzburg

Following a year of planning and renovation, we are pleased to say that our office in the city of Salzburg has been brought up to eurofunk's modern and innovative standard.

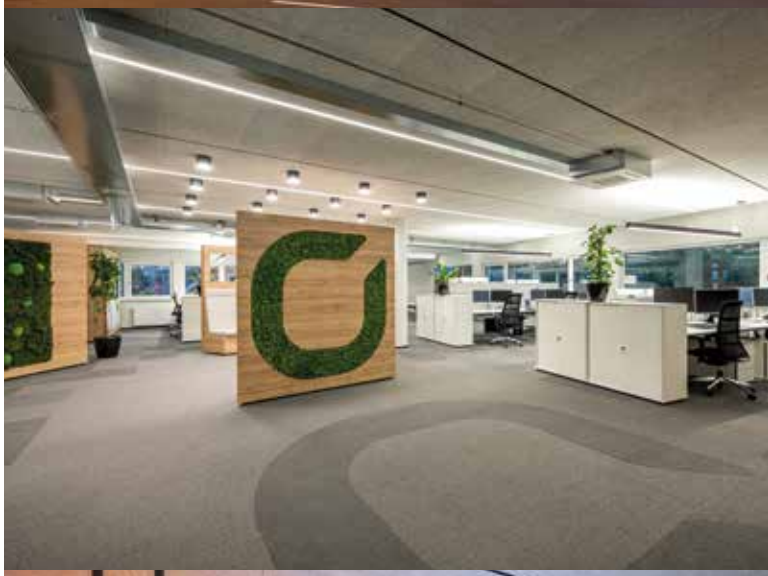
Opened in 1981 as a second branch, the Salzburg office plays a significant role in the eurofunk story. The location has witnessed unprecedented progress and innovation in its 40 year history such as vehicles being equipped with technical equipment and the marketing of pagers and radios.

As eurofunk grew in both size and stature, new technological fields gained in importance in the areas of communications and software development. The teams that gradually formed earned the location a reputation for development and innovation.

The unique and colorful composition of our Salzburg office continues to be a feature of the renewal. Not only the base for our Austria West sales team and commercial radio, the Salzburg location also houses teams from our various technical and software development departments. This new building guarantees a qualitative and innovative work environment. Now, at all eurofunk locations, we are able to attract and keep the best minds in the business.

A total of 80 employees now have access to hi-tech office space and excellent infrastructure to further develop control center solutions of the future.

Petra BAUMANN



eAML – eurofunk Advanced Mobile Location

Now fully integrated into our mission control and communication system portfolio

„Where exactly are you located?".

This is one of the first questions you will hear during emergency call processing in a control center and it is here, right at the beginning of the call, where eurofunk Advanced Mobile Location (**eAML**) is most useful. This article describes the full integration of **AML** into the eurofunk products of emergency and communication control technology**.**

AML is a worldwide initiative, mainly driven by Google, to eliminate the problem of cell phone location detection when making emergency calls. Cell phones that support AML automatically send several SMS messages with current location data after the emergency call has been dialed. Making an emergency call immediately activates the cell phone's GPS receiver and existing WLAN networks which can then be used for localization.
Without AML, as is the case with older technologies that only transmit the position of the radio cell (radio masts, center) instead of the exact position of the smartphone, positioning accuracy is a problem. The size of radio cells can vary greatly which means that the smartphone, and with it the caller, can be a good distance from the nearest radio cell.

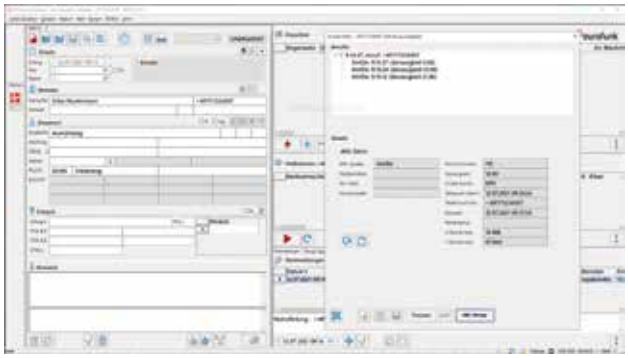
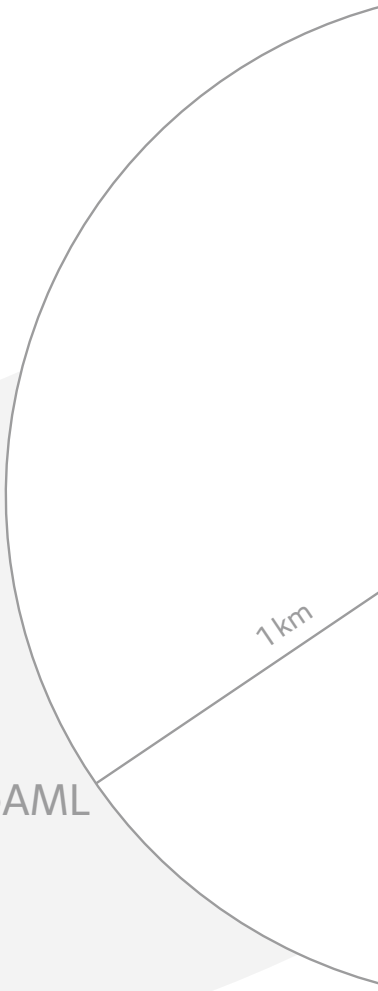


Fig. 1: Three AML caller data sets in ELDIS 3 Operations Processing (EIBA).



DETERMINING EXACT LOCATION DATA BY AML

AML has position accuracy of 15 to 50 meters and saves up to 800 lives annually. It is an integral part of the telephone's operating system – no app required – and positioning data is sent with the emergency call.
In Germany and Austria, location data is transmitted to the official AML endpoint of the respective country and forwarded from there directly to the responsible control center.

AML AND eAML - TECHNICAL INTERACTION

Integrated into eurofunk's communication technologies IDDS UCiP and emc2 is the AML endpoint, which means that both systems receive AML data directly. For information security reasons, the connection is always established from the communi-

Johann DOPPLER

with eAML
15 m

EMERGENCY NUMBERS

eurofunk eAML products support all possible emergency numbers although AML itself is currently only activated for selected ones. Country-specific requirements regarding emergency numbers must be considered at this point.

AML was originally designed for the Euro emergency hotline 112. From a purely technical point of view, however, the German solution for fire and rescue services is viable for use with other country-specific numbers as well. Currently, work is underway to provide a separate AML endpoint for the police emergency hotline 110 for the whole country.
In Austria, where numerous emergency numbers are in use, AML is already operational for 122, 140, 141, 144 and 128.

WHAT'S NEXT?

The current eAML implementation for eurofunk products is just the beginning. This has been strongly oriented towards the so-called eCall implementation and has already found approval with first customers. Both eAML and AML will continue to evolve; plans for higher accuracy and augmented presentation are already underway.

cation system to the AML endpoint. As soon as the AML data is available, it is automatically passed on to ELDIS 3 via the existing interface.

Implementation is planned for use on existing technology with an update to the software. With eAML, the eurofunk communication system draws data from the AML endpoint while the dispatcher is talking to the emergency caller. This is done automatically in the background without user interaction.
For users, everything stays the same.
eAML is user friendly with a seamless integration into the existing technology that makes the AML positioning data easy to find.
This applies to familiar workflows as well as representations of positioning data. For example, in ELDIS 3, an operation can be opened via the AML position in the operation processing (EIBA) or the exact AML position can be viewed by GEO Appliance.

If you would like to learn more about eAML, we invite you to have a look at our **eurofunk webisode.** It is available for download on our website.

State of the art disposition tech for the KVBW

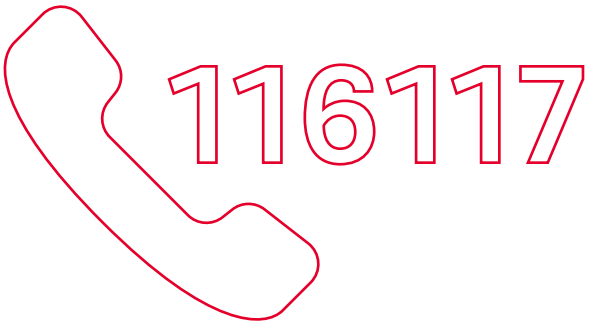
Two major milestones in the implementation of new disposition technology for the Kassenärztliche Vereinigung (Association of Public Health Physicians) of Baden-Württemberg have been reached: Mannheim on October 1st and Bruchsal on March 31st of this year.
To gain further insight into the project, we spoke with Tobias Binder, Head of Service & Consulting at KV about the various project phases, the collaboration with eurofunk and the exciting innovations yet to come.

Mr Binder, what does the KVBW do? What challenges does it face?

The KV is a corporation under public law responsible for fulfilling official tasks set by the state. One of its main tasks is to ensure outpatient health care by providing a sufficient number of general practitioners and specialists as well as psychotherapists and physiotherapists in private practice.
The greatest challenges lie in finding enough young physicians willing to join the healthcare system, and at the same time integrating non-contract physicians such as private physicians or hospital employees through appropriate accreditation procedures. All in all, besides financing issues, the current pandemic management, quality assurance and promotion, and economic efficiency, the main challenges are structural. As you can see, there are plenty of them.

What were the reasons for setting up the new control centers? What are the new functions of the KVBW after the changeover?

The formal trigger for the project was the legislative mandate via the TSVG (Term Service and Care Act). The associations were to operate so-called extended appointment service centers with 24/7 operations and implement patient management based on the initial assessment procedure. With the TSVG, the scope of responsibility was broadened to include such things as a) around the clock service, b) acute cases, c) initial medical assessment and d) acute cases within 24 hours.



Christina DAVID

For this initial assessment tool Eurofunk has built an interface to ELDIS 3. The web-based tool can be integrated into each application processing and assessment result; the dispatchers try then to direct the patient to the right level of care. After this assessment the systems forwards a recommendation for action on the correct level or time of care.

What is the advantage of the new system for physicians and patients? What added value do you as a KV expect from it?

We expect real advantages for physicians and patients. For patients, that they can call a single number, 116117, and get help around the clock and, ideally, an offer of help that is appropriate for their care. For the physicians, of course, this means better support in the scheduling and transmission of home visit requests.
In the project itself and with your help, we are currently working on providing a disposition app at the interface to ELDIS 3. In this way, the deployment data can be sent directly to the doctors via app and availability can be tracked via geo-reference. The status review would then also be reflected in the processing of the operation.

How was eurofunk able to win the tender?

The KV put the contract to European-wide tender and in response to this tender eurofunk submitted an application. In my opinion, eurofunk's application was simply good - so good, in fact, that eurofunk was awarded the contract over its competitors. It has to be said that in Germany, we in Baden-Württemberg are an absolute exception: of 17 KVs in the state, 15 have one and the same mission control system. The KV in Schleswig-Holstein uses a proprietary system from a Czech developer, and then there's the KVBW with eurofunk. So, together with you, we are true pioneers!

Can you give us a brief overview of the project and its process?

In 2019 we started with a small in-house project in which inter-divisional experts came together as a core project team within the KVBW.
During the project, we then founded the subsidiary, KV SiS BW Sicherstellungs-GmbH, in November 2019. Gradually, the project moved from the current project form to the subsidiary. With eurofunk as the expert, we then gradually moved on to implementation.

Are there other products in use besides ELDIS 3 and emc^{WEB}? If so, which ones?

Yes, in addition to the proprietary eurofunk products, we also operate other software components for which eurofunk builds the interface to ELDIS 3. These include an assessment tool called SMED (Structured Initial Medical Evaluation Germany). We also use proprietary software that we developed ourselves in the KV system, the so-called eTermin-Service of the KV. Through the interface to ELDIS 3, the topic of acute appointment placement should be well integrated.

How can one imagine the major project phases from your point of view?

The project is still in progress.
A big and important milestone was the commissioning of the Bruchsal site on March 31, 2021 with 50 workstations. In Mannheim, however, there are again plans to relocate which means: after construction is before construction! The relocation should occur within the city of Mannheim, so that we will have a site there that is about the same size as in Bruchsal. This means that we will be able to cooperate intensively again over the next year, because around 40 workstations will have to be rolled out here along the lines of Bruchsal. →

»After go-live is before go-live! The eurofunk support team was indispensible.«

Tobias BINDER,
Head of Service & Consulting at KV

To what extent did the pandemic have an impact on the project?

Corona - that was a huge issue with us, of course. We were blocked in terms of care - organizing the swabs or setting up testing centers and invoicing the vaccines - the classic care issues came crashing down on the KV. Since all resources were tied up in the fight against the pandemic, we saw almost no progress in the project itself. It was simply the end of the road! In addition, the Ministry of Health was offered 116117 for vaccination management, which is basically a matter for the states. That means: before the pandemic, we had about 9 million calls nationwide in the calendar year. In May 2021, we had handled upwards of 49 million calls already - that's an immense challenge!

How would you describe the cooperation with eurofunk during go-live and the completion of the two control center locations in Mannheim and Bruchsal?

eurofunk was indespensible throughout the early life support phase and directly following go-live. The system at this point needed a certain amount of reconfiguration to get it running smoothly. The telephone system needed adjusting and the master data was updated as well - all in all we were glad that we had access to the eurofunk technicians on site.

Where is the project now and what are the next steps?

After the go-live is before the go-live! As mentioned, we will be expanding again in Mannheim and will hopefully be able to go live within the next six months. The lion's share of the work should be done by the end of the year. Then it will be time to concentrate on the nice things in life... like software and process optimization. We will devote ourselves to that afterwards, at the moment it's really all about the big picture!

Thank you very much for the conversation!

Southeast Hesse Police Headquarters

Stefan HUTTER

eurofunk control center technology for Germany's most modern police headquarters

The Southeast Hesse Police are now headquartered in the most contemporary facilities in the country. Three years in the making with its base in Offenbach, this new flagship for the security services offers state-of-the-art working conditions for around 900 Hessian police officers on a net floor space of over 68,000m². Modern offices, zones for special police technology, laboratories, a day care center, a multi-purpose hall, motor vehicle and forensic examination facilities, a canteen, a parking garage, detention areas and a police station make up the main functional units of this striking building complex. Designed by eurofunk, the control and command center forms a vital security hub for the residents of southeast Hesse. By centralizing all emergency calls from the Main-Kinzig district as well as from the city and district of Offenbach, all patrol cars and response personnel from Egelsbach to the Bergwinkel near Schlüchtern can be coordinated and dispatched from one location.

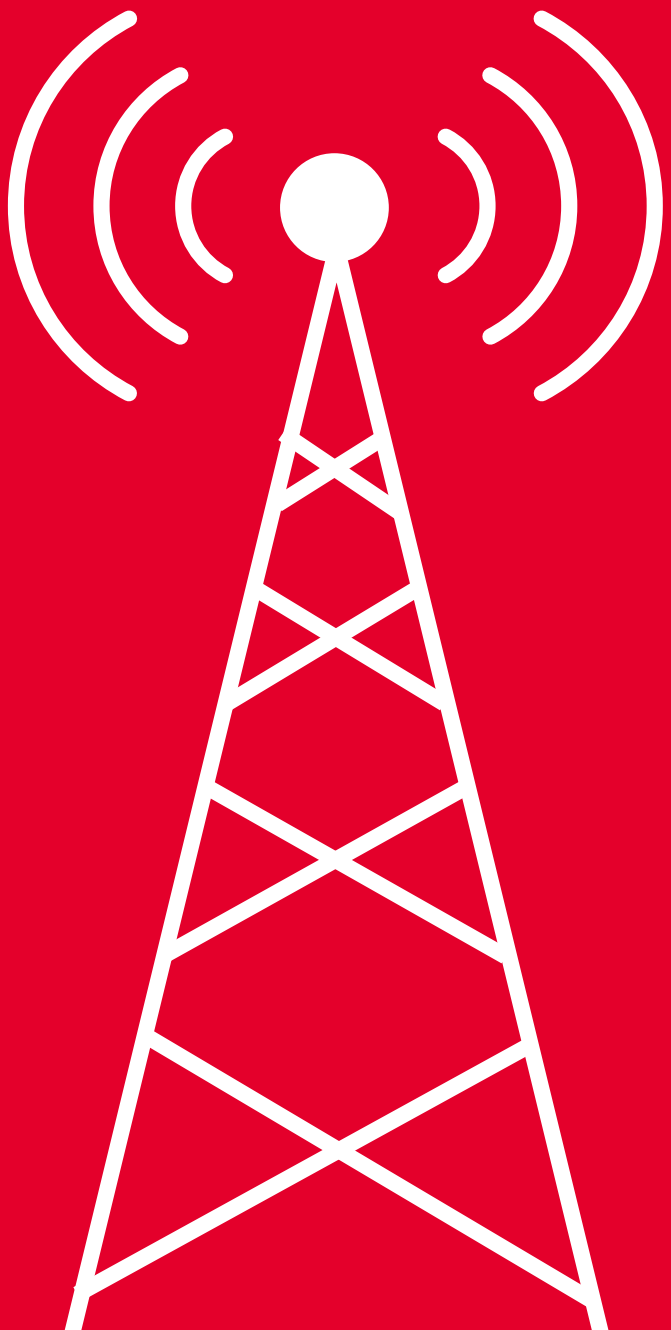
Citizens benefit in particular from eurofunk's state-of-the-art control center equipment, incorporating all functions relevant to operations and situation management in a single system. IP-based, end-to-end browser-enabled communications technology has been integrated into eOCS for emergency call and radio dispatch. All essential components are supplied by one company and provide seamless workflows on an intuitive user interface.

The control center of the Southeast Hesse Police Headquarters is an integral part of the control center network of the Hessian police and all seven precincts are equipped with eurofunk technology. The close cooperation among the police departments, ensuring that the Hessian public is give the best possible protection and support in an emergency situation, is based on this state-wide uniform control center technology. The control center network ensures cooperative support in the event of unusually heavy call traffic or mutual assistance in situations of exceptional threat.

Also unique to the command and control center are the state-of-the-art control center desks. The innovative light and sound bar ensures optimal lighting conditions at the individual workstations and vertically arranged loudspeakers optimize workstation sound conditions while minimizing acoustic interference from the rest of the control center area. Electrically height-adjustable desks and monitors combined with innovative user interfaces and workflows form the basis for a health-friendly working environment at the twelve workstations.

We at eurofunk would like to congratulate all employees of the Southeast Hessian police on the new control center. We thank you for the trust you have placed in us and wish you much success in your new working environment!

IP emergency call conversions Successful industrial roll-out



As we come to the end of the conversion phase for IP emergency call, eurofunk is pleased to say that the IDDS UCiP communication solution has proven itself once again as a modern, native IP communication system. During the transition, more than 50 customers once more turned to eurofunk for its knowledge and understanding of current and future control center requirements. Over the course of 2021, all of the conversions entrusted to eurofunk were completed successfully.

Günter DUTZLER

The Deutsche Telekom decision to discontinue ISDN service completely made it necessary for the control centers to develop a plan to convert emergency call handling as well. Emergency call connections in Germany are subject to the **Technical Guideline Emergency Call of the Federal Network Agency**. Edition 2.0, which was issued on August 22, 2018, includes guidelines on emergency call connections via VoIP. These contain additional functionalities specific to to emergency calls, such as the transmission of location data, eCall or the ability to receive emergency faxes. The guideline allows for various connection variants with or without multipath routing. If multipath routing is chosen, it is also possible to split the connections across two locations.

SUCCESSFUL IMPLEMENTATION IN THE FIELD

The conversions affected all BOS control centers which meant that planning and preparation needed to begin early. Top priority for eurofunk was the quick implementation of solutions for all affected customers, regardless of communications system: the older IDDS 512 or the IP-capable IDDS UCiP or emc$^{2\,VOIP}$. Based on this, various connection concepts were developed, which provide either a direct VoIP connection or a connection via converter. The latter converts the calls back to ISDN to conform with the emergency call format.

Concept designs for VoIP native connections to the IDDS UCiP or emc$^{2\,VOIP}$ can also be used for other products such as:

- **VoIP telephony:** integration of additional SIP trunks such as the 19222, public network telephony or cross connections.
- **Fallback level:** In the event of a communication system failure, calls are automatically forwarded to a fallback system (e.g. in-house PBX).
- **Voice recording:** Voice recording is expanded to include VoIP calls. An additional connection box as with ISDN (high-impedance tap) is not necessary. →

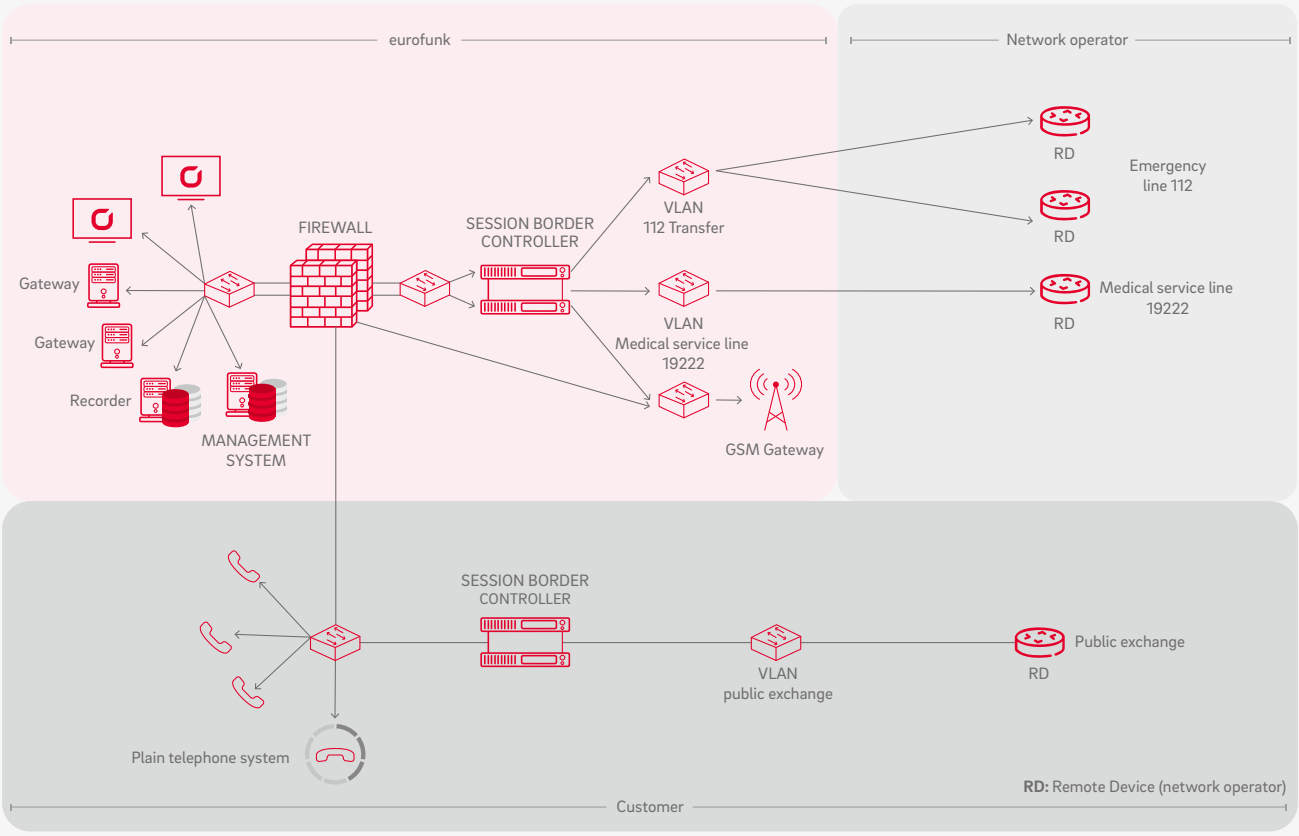


Fig. 1: VoIP telephony, fallback level, voice documentation

Solutions using media gateways are mainly for eurofunk customers with IDDS 512. In this case, systems, including fall-back systems or voice recording, remain in place. Due to its compatibility with ISDN, this variant has also been implemented for control centers with third-party communication systems.
In total, eurofunk has been commissioned by more than 50 control centers to implement IP emergency call. By July 2021, 95% of emergency call conversions had already been completed. The remaining control centers were converted successfully over the course of the year.

The switch to IP was accompanied by other customer projects such as the replacement of IT hardware, the creation of new redundancy or fallback mechanisms, or the integration of additional VoIP telephone lines. These long-term investments will ensure efficient and reliable control center operations for years to come.

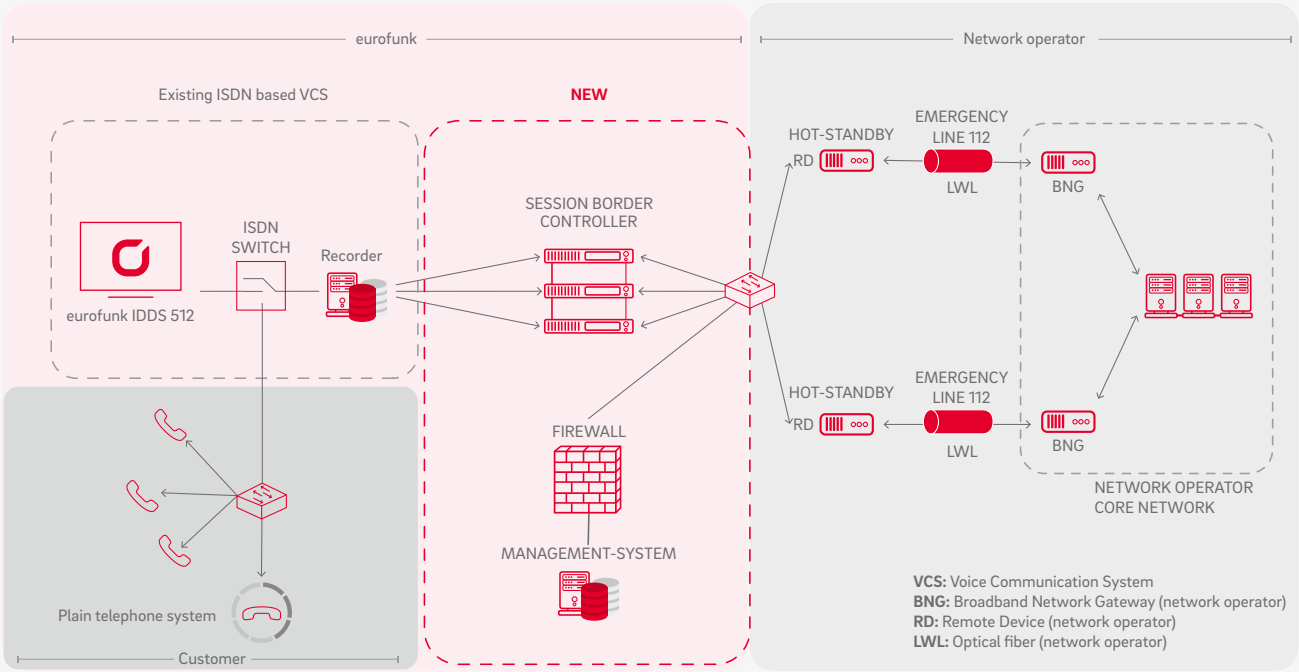


Fig. 2: Network switches, SBC and firewall are distributed between the two technical roomsto functionally form a logical, redundant unit (cluster).

Benefits of IP emergeny calls

- Improved voice quality
- Easy expansion of voice channels
- Modern, standardized and sustainable technology, based on COTS components
- Increase in the overall system availability is possible
- Support of SIP trunk call routing (for call bundling and for automatic forwarding in case of failures)
- Future enhancements such as chats & video telephony or the exchange of real-time data will be feasible

For more details please refer to the „IP emergency calls“ webisode - available for download on our website.

ELDIS 3
New developments & highlights

eurofunk's ELDIS3 is well known to many of our valued customers as an integral part of mission control.

Fig. 1: Login at the webinterface for fire areas
© Karte: Basemap.at

Less known perhaps are the efforts by our software developers - the thousands of hours - that have gone into the improvement of existing functionality and the introduction of new operational capabilities. The time invested also ensures that current operating systems and database versions are tested and supported.

HIGHLIGHTS

Web portal for the transmission of registered fires

Using a web portal, registered fires can be recorded and then automatically transmitted to ELDIS 3. These recorded data sets help to identify registered events during incoming emergency calls and to check for duplicates. This is another important step towards minimizing manual data maintenance in the control centers.

Further interfaces to structured call retrieval systems

Becoming increasingly important are automated systems for emergency call handling. For this reason we have added interfaces to the NOAS (Emergency Call Query System) and to SMED (Structured Initial Assessment Procedure Germany). Improvements to the current AUDIS interface include compatibility with AUDIS 2.0 and support for Google Maps location search which also includes the transfer of the location information to ELDIS.

Further new functionalities in the interaction between ELDIS and AUDIS are planned.

KATWARN Interface

KATWARN is a warning and information system used widely in Austria and Germany as a method of sending warnings to the wider population. The new ELDIS integration makes it possible to create predefined warnings, which can then be automatically transferred to the KATWARN system in case of an emergency.

Connection of the open source community solution "feuerwehreinsatz.info"

The open source community solution feuerwehreinsatz.info, which is well established in Austria, has been fully integrated into ELDIS 3. The connection allows for the forwarding of operations to feuerwehreinsatz.info and for status messages and feedback to be sent to ELDIS 3. eurofunk also extended feuerwehreinsatz.info to include a deployment overview for the wider population that is map-centric and web-enabled. →

Martin JÖRG

Beyond the developments described so far, many other small improvements have been incorporated into ELDIS 3, including:

- DCI interface improvements
- Improvements/extensions of the mail interface
- Support for Beronet SMS modem
- Enhancements for eMID 2.0
- Performance optimizations GEO
- Enhancements of the Web.ei³ interface
- Dialing help button for patient*s mask
- IVENA workflow via Rescuetrack
- Automatic patient assignment according to transport capacity
- AML integration (Advanced Mobile Location)
- Display of arrival time according to routing in the dispatch list
- Identification of prioritized responses incl. filtering option
- Improvement of the +3 alerting process in the ELDIS Resource Manager
- Gate openings via SDS messages
- Optimization of status return logic in digital radio based on voice group membership
- Enhancements to the Active Monitoring fault reporting system
- Improvements of the telephone book search Operation processing
- Blue light SMS interface
- Support of the new eMessage web interface
- Optimization of the use of virtual workstations via Remote Desktop Services
- and many more

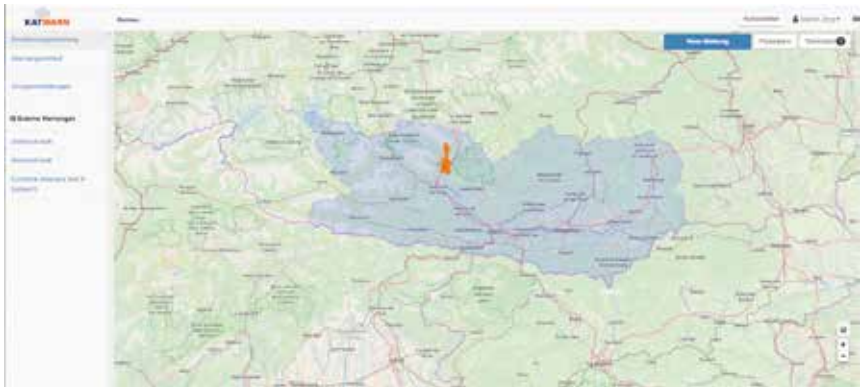


Fig. 2: © Katwarn

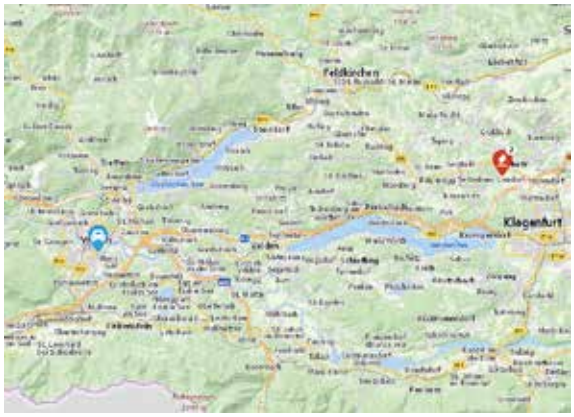
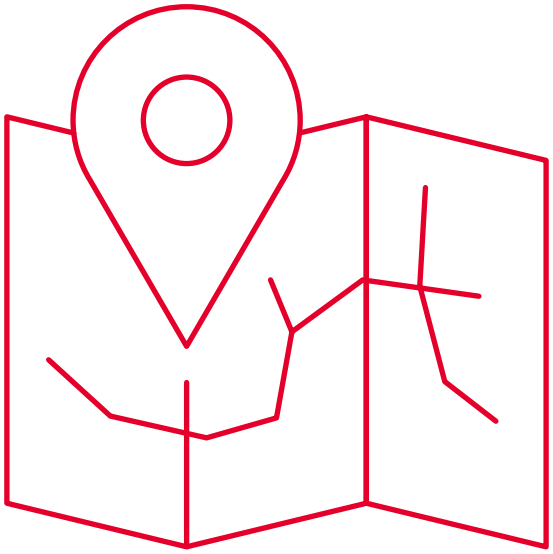


Fig. 3: © feuerwehreinsatz.info



ELDIS 3
New developments & highlights

Universal command line execution

To deal with an ever-increasing number of third-party connections, ELDIS has a new element action for command line execution. For the more complex connections or workflows and interconnections that demand a dedicated interface, this feature will allow us to meet requirements with minimum delay. The new element action allows any string with data of the current application to be executed within the scope of an action and the result of the execution to be evaluated (action successful/unsuccessful). This means that requirements such as the following can be realised by simple scripts that have been written by our consultants or by you, the customer:

- Data transfer to a ticket system
- Data transfer to an API/web service (Divera, Katretter etc.)
- Start of an application on the workstation computer upon signal acceptance with deployment generation
- Triggering of push messages on cell phones (Pushsafer, WhatsApp etc.)

Fig. 4: © Pushsafer

Bavarian Network of Integrated Control Centers

Stefan HUTTER

For the Bavarian Network of Integrated Control Centers – a good thing just got better

The **Integrated Control Center Network of the Free State of Bavaria** is a success story that is now entering its **15th year**. With the rollout of ELDIS 3 BY version 3, the next major software release, we will be implementing **a number of important functional enhancements**. Equally important for the future of the control center network is the certification of the new IDDS UCiP generation for the TETRA system release TSR9.0, which is to be rolled out in 2022.

Since all **26 integrated control centers operate with uniform mission control software** and according to the same principles and procedures, a comprehensive roll-out of new functionalities requires intensive coordination.

In light of this, the Bavarian State Ministry of the Interior established the Integrated Control Center Department D5 under the direction of Johannes Buchhauser. This department is responsible for the strategic alignment of the centers and for the administration related to budgeting and grants.
Assisting D5 in its day-to-day business is the department of Procedural Coordination of Integrated Control Centers (VK-ILS), a staff unit of the Geretsried State Fire Academy, which takes decisions regarding the development of system functions, carries out release tests and coordinates rollout processes. Potentially useful functions are evaluated by the department and, once developed, tested at the **Extended Test Environment (ETU) in Geretsried** before being released for implementation in the control centers.

„The VK-ILS is essential for quality assurance as we continue to expand mission control system functionality," says Buchhauser.

Key tasks include the coordination of **IP emergency call conversions, eCall implementations, TETRA alerting implementations and the rollout of the new major software release ELDIS 3 BY Version 3**. Uniform technical requirements are the basis for the commissioning of new functionality. „Proven processes ensure that complex rollout procedures can be coordinated and run reliably," says Dr. Arne Seifert, head of VK-ILS.

We at eurofunk would like to thank control center employees, the Bavarian State Ministry's D5 department, the VK-ILS department, and the Geretsried State Firefighting School most sincerely for their many years of cooperation and trust!

eMRS – eurofunk Mobile Resource Services

Implementing a much-requested customer requirement

Mobility has been the overriding topic of many of our recent conversations. It comes up during eurofunk's "Innovation Circles", a discussion forum that was launched in 2019, we hear it during the interesting exchanges we have with our industry and public customers and it has been the main focus of many recent tenders. Mobility of the emergency services and the possibility for mobile access to supporting digital services is the hot topic of the day.

With **eOCS (eurofunk Operation Center Suite)**, a 100% browser-based operations control system, work-station use via mobile device is already possible. **eOCS Command & Control** has extensive functionality and a workflow-oriented user interface geared toward the processes of mission acceptance, task alerting/assignment, mission management/escort and documentation. However, the requirements of the emergency services for a mobile application on smaller devices require a slightly different orientation.

INTEGRATION FOR ELDIS 3 AND eOCS

Mobile Resource Services - or MRS for short - can be used with ELDIS 3 (version 4.0 or higher) or with eOCS and is also viable for other mission control systems by way of an open interface.

SUPPORTED BY eOCS PORTABLE

The eMRS app **eOCS PORTABLE** is available for iOS and Android and can be used on smartphones and tablets. There is also the option of integrating it into already installed infotainment systems, such as those from major car manufacturers.

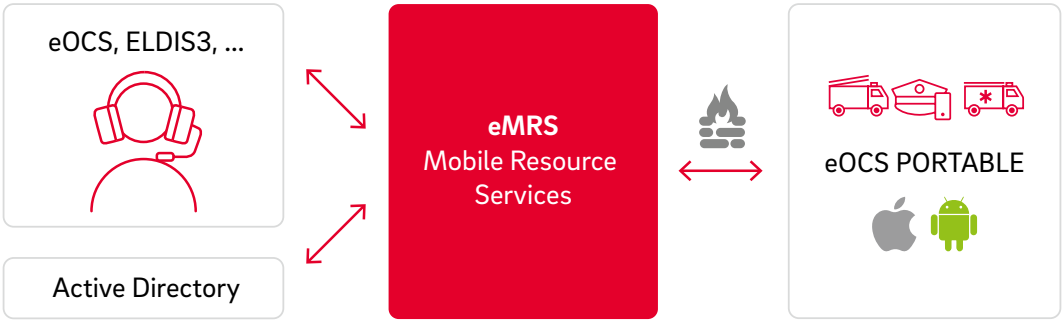
eMRS can be used through the following:

eMRS hosted by eurofunk

- Operation in eurofunk data centers
- Site2Site VPN connection to the control center
- Administration access by customers via web

eMRS operation by customers

- Infrastructure and services directly at customer's site or in their cloud environment
- Project-specific mobile device management and authorization connection



Christian REPASKI

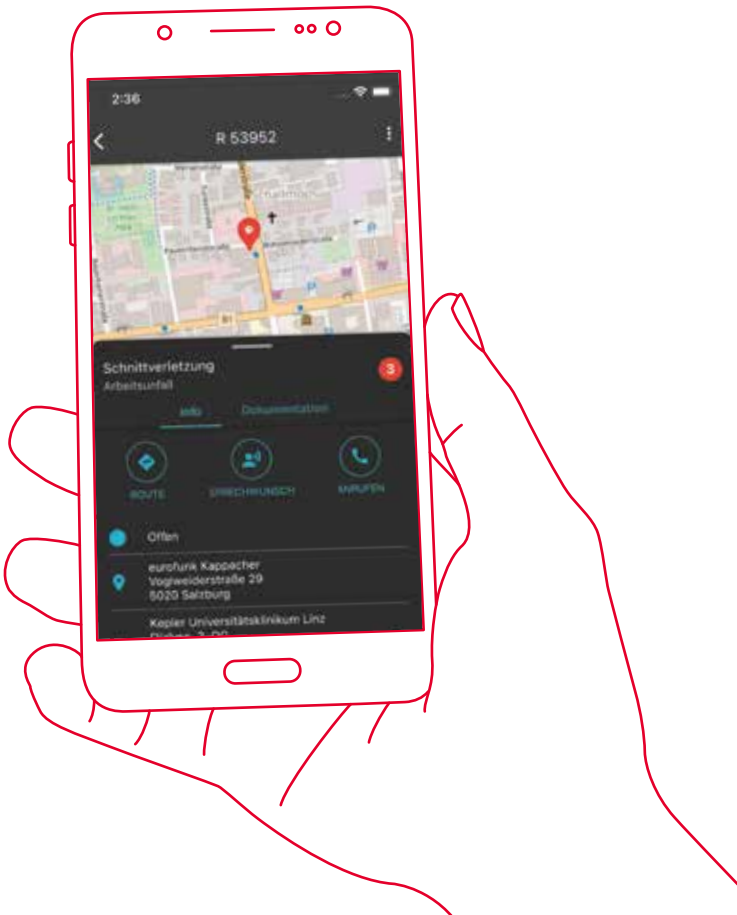
eMRS- – The main use cases

- Authentication and authorization of the emergency services - partly by integrating existing services (LDAP, OAuth, etc.) and 2-factor mechanisms.
- Roster-linked or up-to-date assignment of emergency services (persons) to vehicles through predefined or ad hoc pairing by means of QR code scan or manual selection
- Informing emergency services about new assignments with all relevant information (assignment location, assignment event, additional data, etc.) and/or changes that arise during processing
- Transmission of the processing status (Read, Accepted, Travel to location, ...) as well as the current position
- Support for emergency services in getting to incident locations or destinations through routing (with optional blue-light routing)
- Support for emergency services through an interactive map component with multiple locations as well as the display of operations and first responders in the immediate vicinity
- Transmission of information (images, videos, text messages, etc.) for the purpose of documentation or communication.
- Mission-related messenger communication for the exchange of data, texts, voice messages, etc.
- Informing emergency services about non-emergency information (news)
- Access to planned or past operations for research purposes

Throughout the development phase, it was important that users be included in the process. We received invaluable input not only from those members of our development team with emergency services experience, but also from such valued customers as the Red Cross of Upper Austria or the Salzburg Fire Department with whom we were able to carry out a so-called proof-of-concept in a realistic test environment over a period of several weeks.

PROSPECTS

In 2022, eMRS will be used step by step by the Hesse police force as an additional digital link between the control center and the emergency services.



AI-based research project NotAs

Multilingual Emergency Call Assistant: Supporting emergency call answering through AI-based speech processing

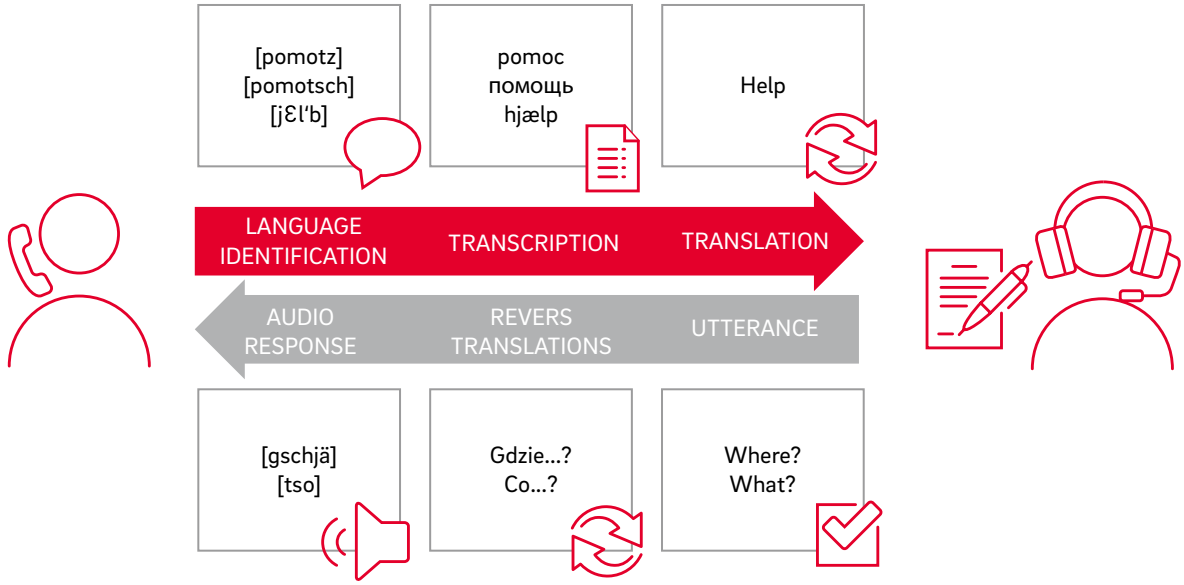


Fig.1: Visualization of the translation process [Source: Dortmund Fire Department].

In October 2020, eurofunk launched NotAs (Multilingual Emergency Call Assistant), a cooperative two year research project into the world of artificial intelligence (AI) which aims to help control center operators with the translation of emergency calls in foreign languages.

THE PROJECT

The two-year project spans the topics of emergency call transcription, machine translation and interpretation (automatic recognition of mission-relevant information). By breaking down language barriers, it is hoped that misunderstandings and repeated inquiries can be avoided and that a significant increase in the quality and speed of emergency call handling can be achieved. The need to involve a human translator should be eliminated. The research project NotAs is funded by the German Federal Ministry of Education and Research as part of the measure „Anwender-Innovativ: Forschung für die zivile Sicherheit II“ (User-Innovative: Research for Civil Security II).

THE PARTNERS

Together with the Institute for Fire and Rescue Technology (IFR) of the Dortmund Fire Department and the German Research Center for Artificial Intelligence (DFKI), we are breaking down communication barriers in emergency situations. The Munich Fire Department, the German Maritime Search and Rescue Service (DGzRS - Die Seenotretter), and the Zurich Protection and Rescue Center (SRZ) of the city of Zurich are involved as associated partners.

Each of the organizations plays an essential role in the project: the IFR research institute has direct access to the control center of the Dortmund Fire Department and its users and is able to provide the perfect project environment; specialized knowledge

Fig.2: Project partners and funding bodies;

Monika SCHNATTLER

comes from DFKI as a renowned research institute with many years of experience in the research field of AI – particularly in speech processing; eurofunk contributes decades of experience in the field of control center technology.

THE RESEARCH GOALS

The project partners set a number of challenging goals ranging from an exploration of both the possibilities and limitations of AI support for emergency call handling, the assessment of purely technical possibilities for foreign language emergency call support, and the development of a sound basis for subsequent product development.

CHALLENGES

While speech recognition and voice assistants such as Alexa and Siri are gaining in prevalence, their use has been limited to rather quiet environments and situations. Their scope of understanding is restricted to well-structured commands in predefined scenarios. What the project is attempting to do, is optimize the context of an existing ASR (Automatic Speech Recognition). This ASR, which is not specifically trained for emergency calls, will generate a transcript which will in turn serve as a starting point for machine translation and interpretation. The challenge addressed here is how to implement translation and interpretation even with relatively little emergency call-specific data.

CURRENTLY

Based on market analysis and a thorough understanding of the requirements, project members developed a click prototype of the user interface. The subsequent evaluation carried out by end users from the professional fire departments of Munich and Dortmund and their feedback is now reflected in the prototype.

Currently the first translation prototype is being integrated into the NotAs famework.
We are also in the process of analyzing the requirements for an interpretation prototype. The first step focuses on recognition and location information including more complex information such as the direction of travel. We will also test existing NER (Named Entity Recognition) functionalities and adapt them if needed to extract semantic information from the unstructured text.

OUTLOOK

Work on the project has taught us that speech recognition is innovative, current, and filled with potential for application in control center operations:

- In combination with IVR (Interactive Voice Response).
- IVoicebot for simple information and possibly in combination with ACD (Automatic Call Distribution)
- IVoice control
- IDictation
- INER could also be used in the context of semantic analysis of event descriptions and notes and could be the basis for further AI-based functionalities of an operations control system.

This first year of research was being devoted to the development of a machine translation and interpretation service which will then move into the demonstration phase in early 2022.

We will keep you up to date!

Fig. 3: Click prototype after incorporating the end-user evaluation (source: eurofunk Kappacher GmbH)

York KEYSER

eurofunk provides implementation support for BSI IT-Grundschutz

The Federal Office for Information Security (BSI) is the body responsible for ensuring that your digital data stays safe and that threats to the state, the economy and the society are dealt with effectively. Regular publications on IT-procedures and methods enable users to develop security concepts that conform to BSI standards, thus helping their organization or authority to receive certification.

eurofunk's information security team helps customers and project teams to develop comprehensive security concepts. It is our job to assist with IT-Grundschutz checks and to assess and implement IT-security measures. The result is a comprehensive IT security concept containing all relevant documents required by the BSI.

HIGH AIMS

Maintaining and improving Information and IT security is a goal that eurofunk set early and continues to treat with the utmost importance when planning, implementing and maintaining customer projects. Through external BSI certification and an additional practitioner certification for all relevant employees, we aim to provide our customers with much needed transparency and to equip our employees with the tools they need to better evaluate customer system requirements.
We know your time is valuable which is why we do our best to create concepts quickly and with a minimum of effort on your part. Current requirements are always taken from the BSI standards 200-x and the IT-Grundschutz compendium 2021. To further optimize the process, eurofunk helped establish BSI IT-Grundschutz profiles for control centers. This allows sector-similar authorities and companies to reduce time and effort by minimizing the number of repeat steps.

EUROFUNK IS BSI CERTIFIED!

BSI certification covers the business processes of the eurofunk KAPPACHER Group for the implementation and maintenance of customer systems in Austria and Germany. Beginning 2019 with a comprehensive audit of the effectiveness of our information management system, we took our first steps towards initial certification according to ISO27001. Following the complex audit process and the implementation of BSI recommendations, eurofunk was granted certification on September 16, 2020 taking IT security far beyond market level and guaranteeing that eurofunk conforms with BSI IT-Grundschutz in all areas.

BSI IT-GRUNDSCHUTZ PRACTITIONERS

In April, 2021 comprehensive training was offered to those employees interested in information security. The course focused on security concepts and information security management systems (ISMS). IT-Grundschutz practitioners also have the necessary know-how to prepare an ISO27001 audit which gives them an edge when it comes to the evaluation and implementation of customer requirements.

BSI IT-GRUNDSCHUTZ PROFILES

The effort required to set up an ISMS that complies with BSI IT-Grundschutz is enormous. The idea behind IT-Grundschutz profiles was to document and store relevant information that can be applied to all companies in the respective industry and reused by template.

At the end of June 2019, eurofunk organized a kick-off workshop together with the BSI and industry representatives to create an IT-Grundschutz profile for control centers. This profile was published by the trade association for control centers on the BSI website in February 2021.
The profile itself includes an information network reference architecture for control centers, assists in determining the need for protection, and lists the building blocks to be modeled.

eurofunk offers more than just BSI IT-Grundschutz

If required, our systems can be tested by certified pentesters using state-of-the-art equipment and techniques. Attack patterns can be reproduced, and the system examined for possible attack vectors. Customers receive a comprehensive report and recommendations for action.
In addition, an automated vulnerability scan based on the BSI-certified vulnerability scanner Greenbone is performed before the systems are delivered. Vulnerabilities such as misconfigurations, uninstalled updates or outdated software products can thus be detected and highlighted.

Learn more about it at: https://www.bsi.bund.de/DE/Themen/Unternehmen-und-Organisationen/Standards-und-Zertifizierung/IT-Grundschutz/IT-Grundschutz-Profile/Profile/itgrundschutzProfile_Profile_node.html

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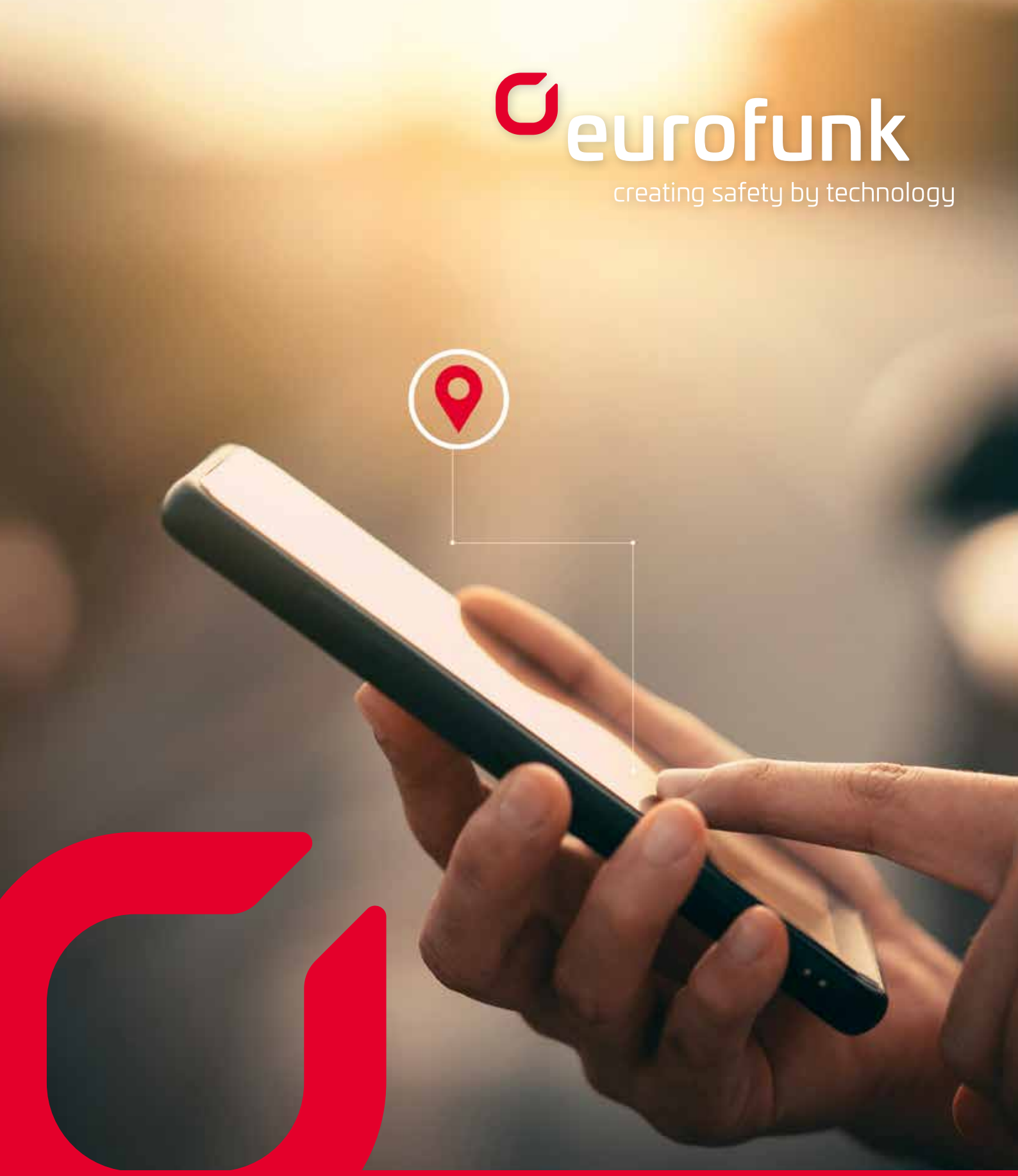

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