



Tunnelkom

We are digitalizing Your Construction Site



Welcome!

欢迎!



1. Our Team

Peter Schmidt	(CEO)
Jens Moll	(CEO)
Andreas Ratzke	(Project Manager)
Sven Moll	(Production)
Jörg Keul	(IT-Support)
Monika Goll	(Team Assistance)
Corinna Schöllkopf	(Production Assistance)



2. Our Location

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Germany

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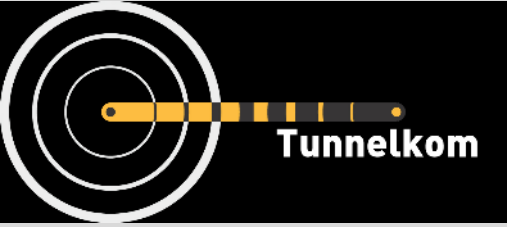
3. Our Portfolio

Tunnel Communication and Safety Technology

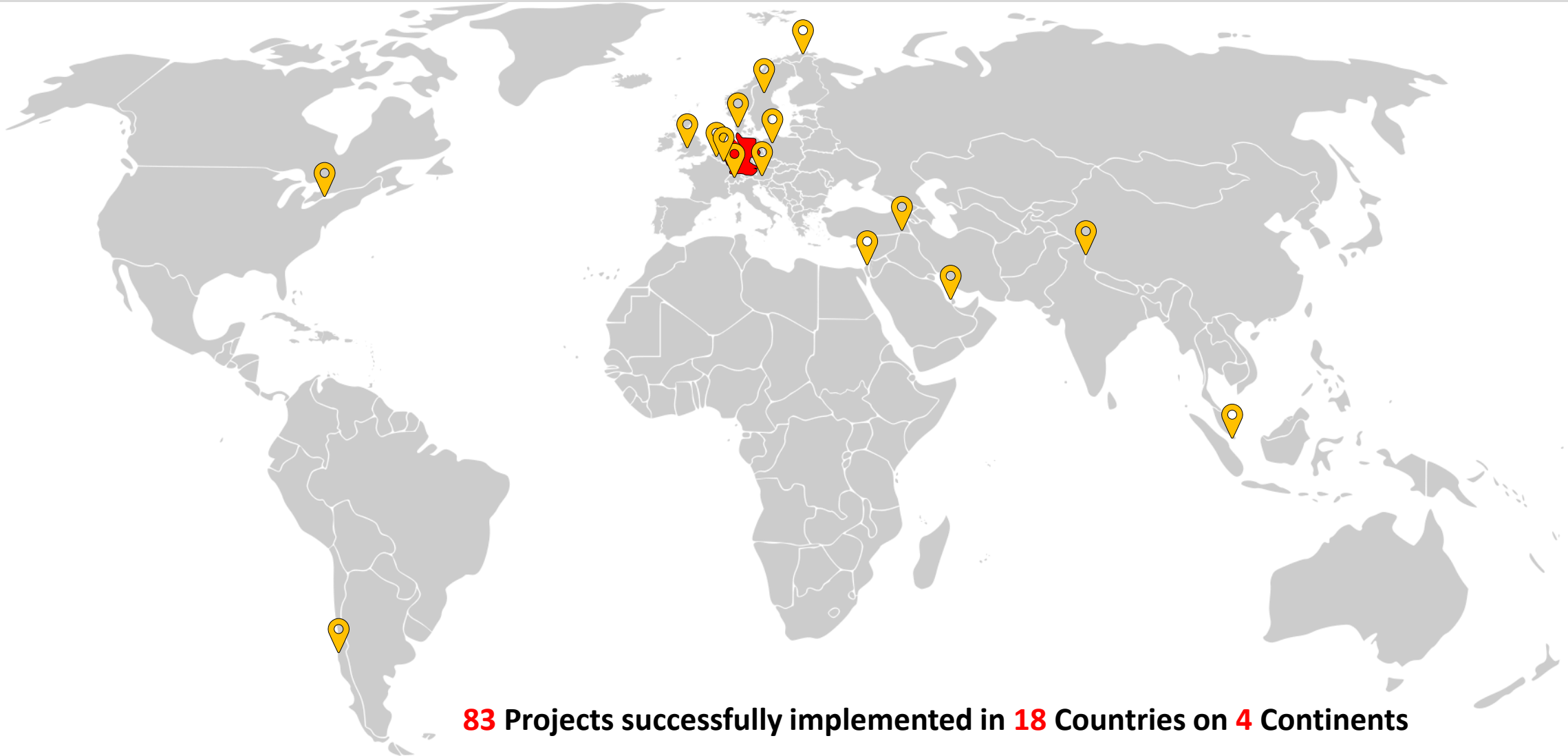
- Planning, sales, and installation of customized communication and security solutions for all construction phases
- Purchase or rental solutions

IT-Infrastructure

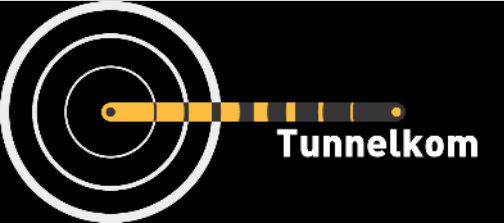
- Planning, implementation, and support of IT infrastructure for construction projects
- Analysis of your construction site processes and support for digitalization
- Provisioning, setup, and operation
- Flexible IT support as needed (remote and on-site)








4. Our “Country Points”

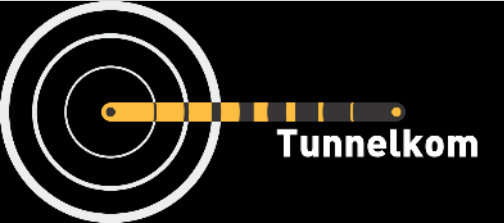


83 Projects successfully implemented in **18** Countries on **4** Continents






















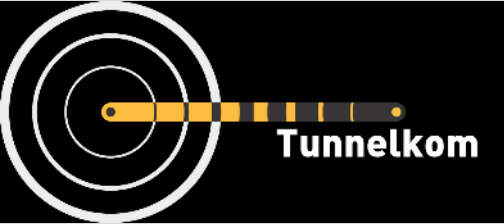
4. Our Projects

Project 	JV Tunnel Blessberg Sued/Nord	Project 	PSK Vianden, Luxembourg	Project 	Exploration Tunnel Kramertunnel
Services	Site Area and Tunnel Infrastructure, DECT, 70cm Radio, Alerting, IT-Equipment, Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, 70cm Radio, Alerting, Phone System (PBX)	Services	70cm Radio, GSM
Project 	JV Tunnel Schwaebisch Gmuend	Project 	Soedermalmstunnel, Stockholm	Project 	Tunnel Fleckberg
Services	Site Area and Tunnel Infrastructure, DECT, 70cm Radio, Alerting, IT-Equipment, Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, Feste Telephone, Phone System (PBX)	Services	70cm Radio, GSM
Project 	Tunnel Rehberg and Masserberg	Project 	Ayalon Sewage Tunnel Tel-Aviv	Project 	Buehltunnel Siegen
Services	Site Area and Tunnel Infrastructure, DECT, 70cm Radio, Alerting, IT-Equipment, Phone System (PBX)	Services	Site Area Infrastructure, IT-Equipment, Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, IT-Equipment, Phone System (PBX)
Project 	JV U4 Hafencity, Hamburg	Project 	JV Tunnel Reitersberg	Project 	Branichtunnel Schriesheim
Services	Site Area and Tunnel Infrastructure, DECT, 70cm Radio, Alerting	Services	70cm Radio	Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, IT-Equipment, Phone System (PBX)
Project 	Branch Office Ankara/HEPP Ilisu	Project 	Rohtang Pass Highway Tunnel	Project 	SEC Toronto
Services	IT-Equipment, Phone System (PBX)	Services	Application-Server	Services	Phone System (PBX)
Project 	JV SATURN X, Metro Amsterdam	Project 	Tunnel Rennberg/Feuerfelsen	Project 	U12 Stadtbahn Stuttgart
Services	Site Area and Tunnel Infrastructure, DECT	Services	70cm Radio	Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, IT-Equipment, Phone System (PBX)
		Project 	JV Tunnel Hohnberg/Füllbach		
		Services	Site Area and Tunnel Infrastructure, DECT, 70cm Radio, Alerting, Phone System (PBX)		






















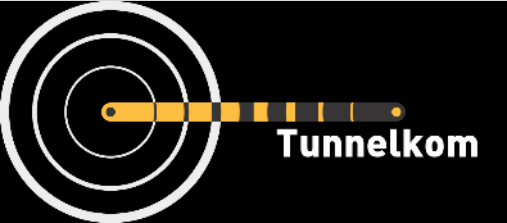
4. Our Projects

Project 	JV ATCOST21 Fildertunnel, UT-Tunnel	Project 	Koralmtunnel KAT3	Project 	JV Tunnel Rastatt
Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, IT-Equipment, Phone System (PBX), Video	Services	70cm Radio, GSM, People Tracking	Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, Phone System (PBX), Video
Project 	JV Tunnel Feuerbach	Project 	JV Bypass Schwarzkopftunnel	Project 	Tunnel Imberg
Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, IT-Equipment, Phone System (PBX), Video	Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, Phone System (PBX)	Services	Site Area Infrastructure
Project 	JV ATA Tunnel Alaufstieg	Project 	JV Tunnel Hirschhagen	Project 	Gemeinschaftskraftwerk Inn (GKI)
Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, IT-Equipment, Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, Phone System (PBX)
Project 	Kaunertal TVM Druckwasserstollen	Project 	JV Tunnel Alabstieg Ulm	Project 	Tunnel Nordnes Samuelsberg
Services	70cm Radio, GSM	Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, IT-Equipment, Phone System (PBX), Video	Services	GSM, People Tracking
Project 	S10 Neumarkt Mühlviertl	Project 	Großglockner DWS Bärenwerke	Project 	MetNord Copenhagen – Cityringen
Services	GSM	Services	70cm Radio, GSM	Services	Site Area and Tunnel Infrastructure, GSM, Tetra-Radio, Alerting, People Tracking, Phone System (PBX)
Project 	JV ATC Tunnel Cannstatt	Project 	Lehnenstollen Scheibbs	Project 	JV Tunnel Trimberg
Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, Phone System (PBX), Video	Services	GSM	Services	Site Area and Tunnel Infrastructure, Alerting, People Tracking, Phone System (PBX)
		Project 	JV Tunnel Rosenstein		
		Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, Alerting, People Tracking, Phone System (PBX)		



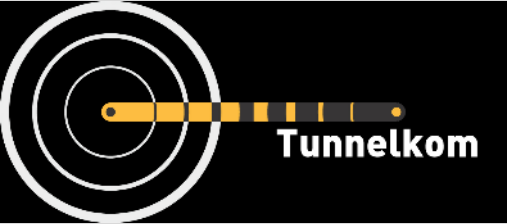
4. Our Projects

Project 	JV BL 60.3/60.5 St. Kanzian	Project 	Humber Pipeline Tunnel Project	Project 	Baltic Pipe Project, Polen & Dänemark
Services	GSM, 70cm Radio, People Tracking	Services	Tunnel Infrastructure, WLAN, IP-Radio, Alerting	Services	Site Area and Tunnel Infrastructure, WLAN, IP-Radio, Alerting, People Tracking, Phone System (PBX)
Project 	Neuer Pforzheimer Tunnel	Project 	DTSS2 T-07, Sewer Tunnel Singapore	Project 	Tunnel U5 Europaviertel Frankfurt
Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, People Tracking, Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, WLAN, IP-Radio, Alerting, People Tracking, Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, Tetra, WLAN, IP-Radio, People Tracking, Phone System (PBX)
Project 	Tunnel Oberau	Project 	JV Tunnel Wolframstrasse	Project 	JV Erneuerung Kuckuckslytunnel
Services	Site Area and Tunnel Infrastructure, GSM, 70cm Radio, People Tracking, Phone System (PBX)	Services	Site Area Infrastructure, IT-Equipment	Services	Site Area Infrastructure, Phone System (PBX)
Project 	Perjentunnel, Landeck	Project 	Nordstream 2 Pipeline Project	Project 	York Potash
Services	GSM, Radio, People Tracking	Services	Site Area and Tunnel Infrastructure, WLAN, IP-Radio, Alerting, People Tracking, Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, WLAN, IP-Radio, Alerting, People Tracking, Phone System (PBX), Video
Project 	Tunnel Scharnitz	Project 	Mesaimeer Pump Station a. Outfall Tunnel, Doha	Project 	Alto Maipo
Services	GSM	Services	Tunnel Infrastructure, WLAN, IP-Radio, People Tracking, Phone System (PBX), Video	Services	Tunnel Infrastructure, WLAN, IP-Radio, Alerting, People Tracking, Phone System (PBX)
Project 	Sanierung Gräberntunnel	Project 	JV ATH, VE10 2. Stammstrecke München	Project 	JV A26 Danube Bridge Linz
Services	Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, WLAN, IP-Radio, Alerting, People Tracking, Phone System (PBX), Video	Services	Site Area and Tunnel Infrastructure, GSM, WLAN, Alerting, People Tracking, Phone System (PBX)
		Project 	JV Flughafentunnel Stuttgart		
		Services	Site Area and Tunnel Infrastructure, WLAN, 70cm Radio, Alerting, People Tracking, Phone System (PBX), Video		



4. Our Projects

Project	Restructuring Engelbergtunnel	Project	BTO Stuttgart 21	Project	Große Wendlinger Kurve
Services	Site Area Infrastructure, Phone System (PBX)	Services	Site Area and Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX), Video	Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX)
Project	Tunnel Swinemünde	Project	Aubergtunnel	Project	U5 Hamburg Lot 1
Services	Site Area and Tunnel Infrastructure, WLAN, IP-Radio, Alerting, People Tracking, Phone System (PBX)	Services	Site Area Infrastructure, Phone System (PBX)	Services	Site IT-Infrastructure
Project	Lövstakken Tunnel	Project	Tunnel Ostelsheim	Project	U5 Hamburg Lot 2
Services	People Tracking	Services	70cm Radio, Tunnel Infrastructure, WLAN, Alerting, People Tracking	Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX)
Project	Tunnel Boyneburg	Project	GWK Ibbenbueren	Project	U5 München West Los 1
Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX)	Services	Site Infrastructure, Tunnel Infrastructure, WLAN, Alerting, People Tracking	Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX), Gate and barrier control
Project	AP2 Toronto	Project	Tunnel Maintenance S-Bahn Stuttgart	Project	U5 München West Los 2
Services	Site Area and Tunnel Infrastructure, WLAN, IP-Radio, People Tracking	Services	Alerting, People Tracking	Services	Site Infrastructure, WLAN, Phone System (PBX), Gate and barrier control
Project	Kandersteg Restructuring Lötschberg	Project	Tunnel Maintenance Elleringhauser Tunnel	Project	U5 München West Los 5
Services	People Tracking	Services	Alerting, People Tracking	Services	Site Infrastructure
		Project	Coire Glass Exploratory Works		
		Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX)		



4. Our Projects

Project	Tunnel Rastatt – Slab Track System	Project	U6 München Verl. Martinsried	Project	
Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX)	Services	Tunnel Infrastructure, WLAN	Services	
Project	Schemmelsbergtunnel	Project	Pfaffensteigtunnel	Project	
Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX)	Services	IT-Infrastructure Site-Office	Services	
Project	WTD52	Project		Project	
Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX)	Services		Services	
Project	VE41 Marienhof München	Project		Project	
Services	70cm Radio System	Services		Services	
Project	Sanierung S-Bahn Stgt.-Flughafen – Stgt. Rohr	Project		Project	
Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX)	Services		Services	
Project	Sanierung Schwarza-Stollen	Project		Project	
Services	Tunnel Infrastructure, WLAN, Alerting, People Tracking, Phone System (PBX)	Services		Services	
		Project		Project	
		Services		Services	

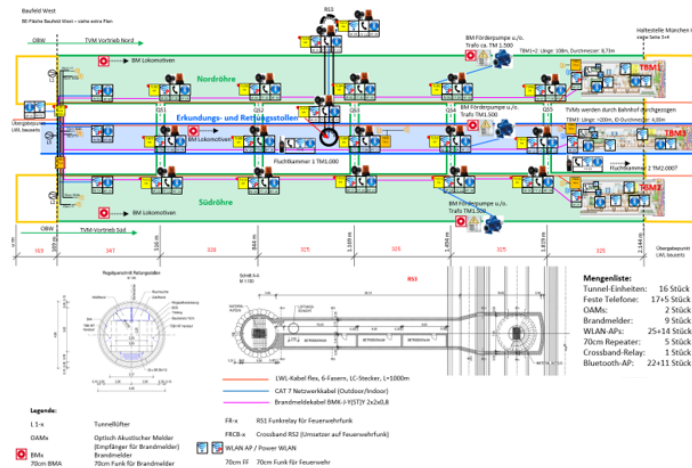
We still have capacity for your project!

5. Tunnel Communication and Safety Technology

Support for the Creation of a Tunnel Safety Concept

- Support for the Creation of a Tunnel Rescue and Safety Concept based on the BoQ and the Requirements off the Rescue Forces and Authorities
- Support for Coordination Talks with Rescue Forces and Authorities

Tunnelkommunikation und Sicherheitstechnik



Version	1.0
Datum	11.05.2021
Erstellt von	Andreas Ratzke

Tunnelkommunikation und Sicherheitstechnik

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0. Kommunikationskonzepte für alle Baustellenbereiche

Das Kommunikationskonzept erfüllt folgende Anforderungen:

1. Kommunikative Baustellensicherheit (Einweisung, Schulung)

5. Tunnel Communication and Safety Technology

Sales and installation of complete tunnel communication systems – purchase and rental solutions

- **for all common wireless solutions:**
 - WIFI, 70cm Radio, 2/4m Radio, Tetra Radio, Analog Radio, GSM, etc.

Our system cabinets are modular and can be adapted to any on-site situation.

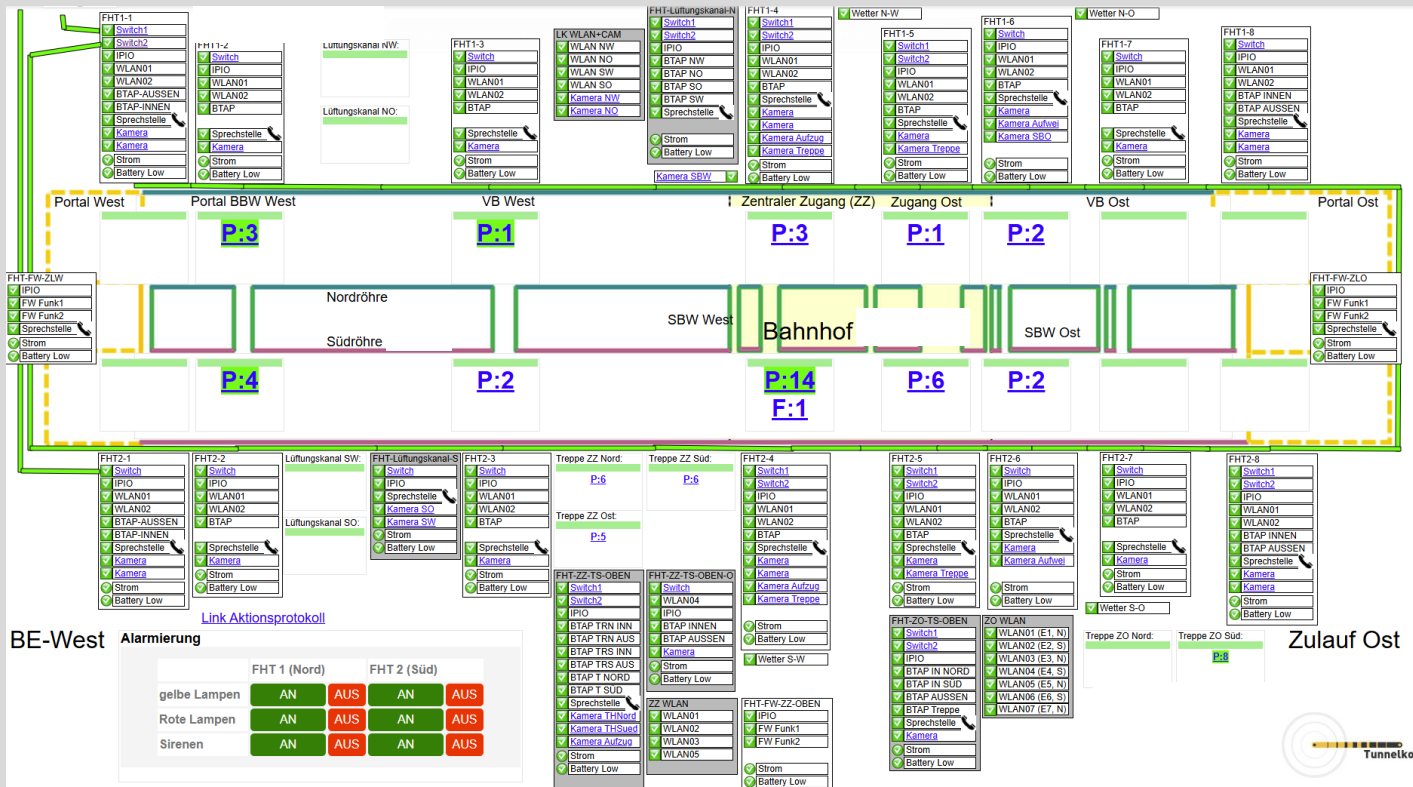
- Thanks to years of experience, we can offer you any type of communication technology.
- Consultation on selecting communication technology
- Installation worldwide



5. Tunnel Communication and Safety Technology

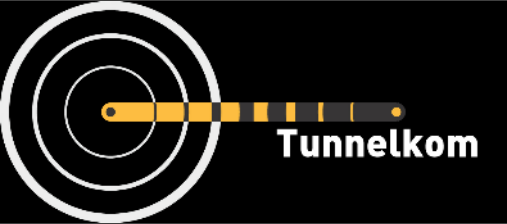
Personnel tracking and equipment monitoring on the construction site

- Use of Bluetooth tags for personnel and vehicle tracking
- Customized tracking grids tailored to the construction site's requirements
- Individualized visualization to meet the specific needs of the construction site



Customized Bluetooth-TAGs based on Your Requirements:

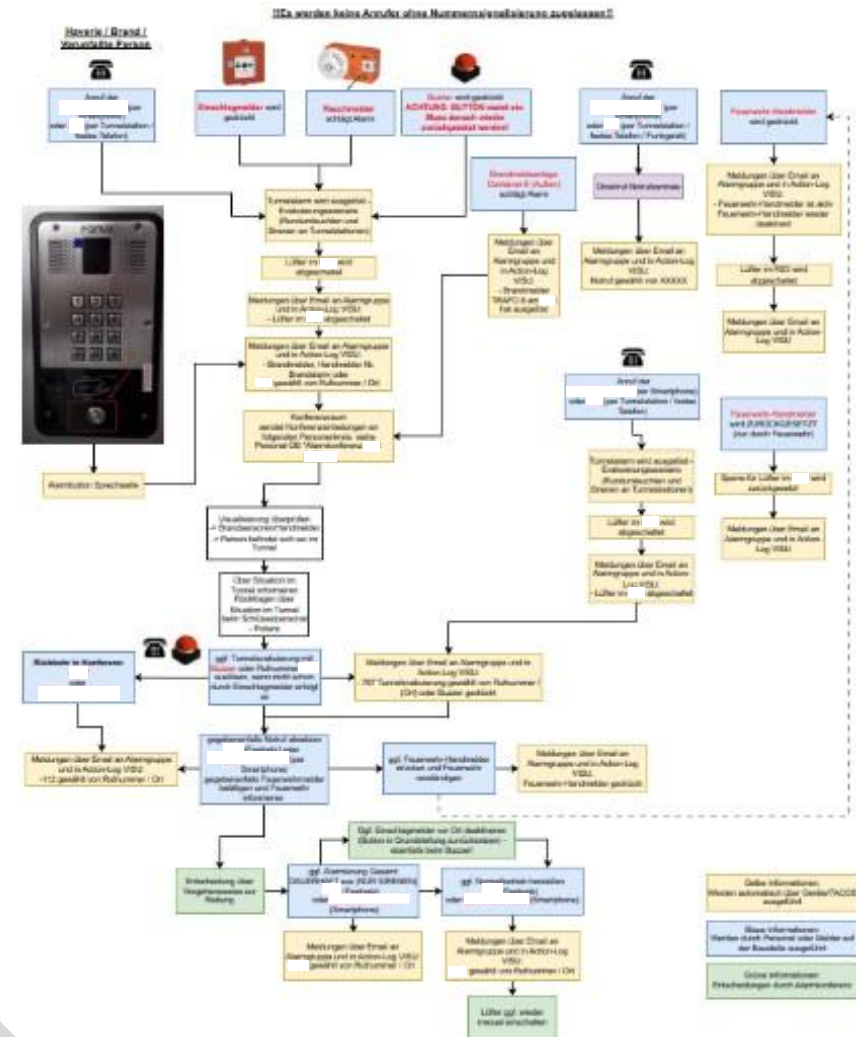
- Price
- Battery Life
- Additional Features (Push Button)



5. Tunnel Communication and Safety Technology

Alerting (Sirens, Flashing Lights)

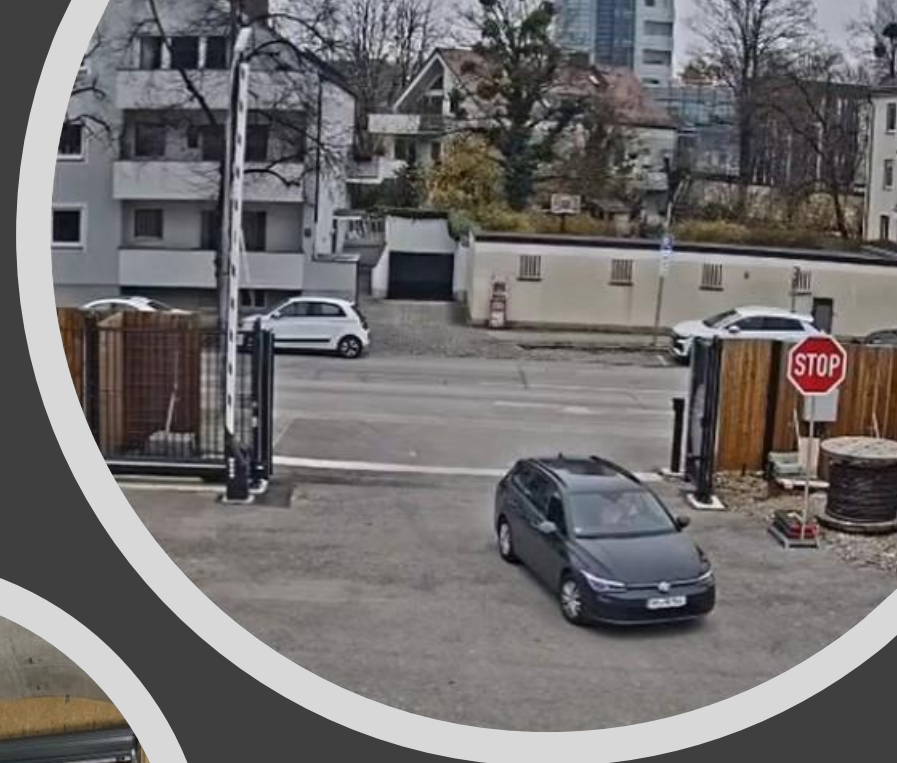
- Tunnel alerting via sirens and flashing lights
- Event-based activation or via telephone, website, buzzer, etc.
- Mapping of complex alerting scenarios using our TACOS alerting and automation software
- Visualization of tunnel alarms, including traceability back to the originator, e.g., via a fire department tablet
- Integration of the rescue service into all scenarios



5. Tunnel Communication and Safety Technology

Individual system control

- Control of gate and barrier systems, fire protection barriers, pumps and tunnel fans, etc.

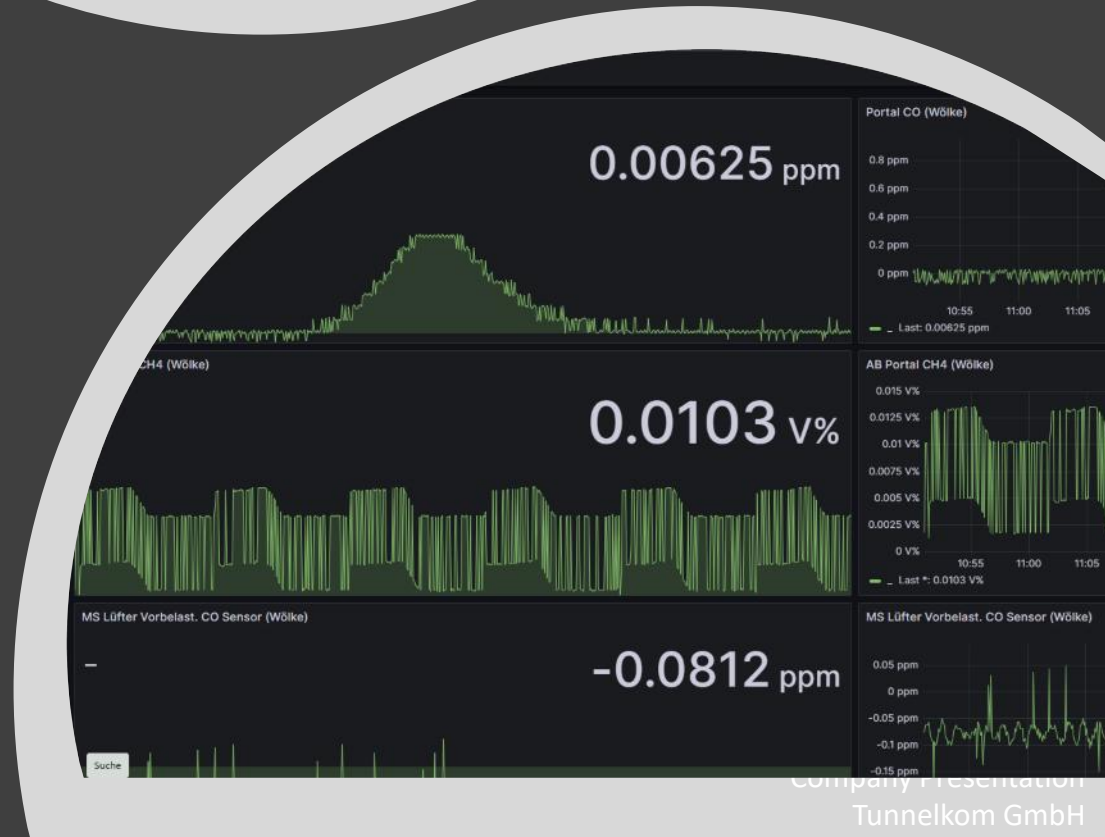


5. Tunnel Communication and Safety Technology

Monitoring of weather data, gas measurements, etc.

Evaluation of tunnel sensor data (gas, etc.)

- Visualization and archiving of measured values and data series
- Integration into existing visualization systems
- Initiation of system actions based on threshold exceedances (locomotive braking, evacuation alarm, power outage, etc.)
- External access for third parties

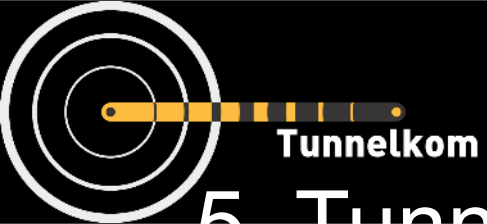


5. Tunnel Communication and Safety Technology

Integration of Third-party Systems

- **Fire Alarm System**
 - Integration of the Fire Alarm System “MOBS” of Company Heim (Interface to TACOS available)
 - Wireless Fire Detectors flexible utilisable
 - Transmission of Alerts to TACOS
 - Reset of Alerts of the Fire Alarm System

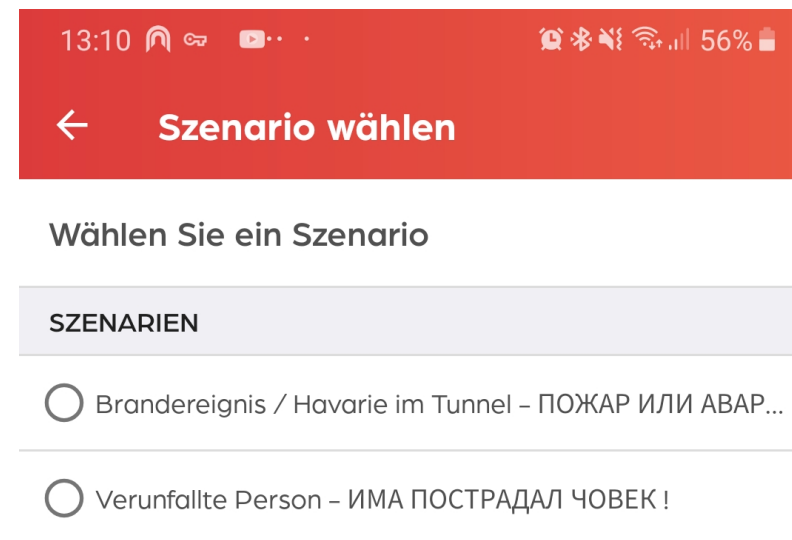
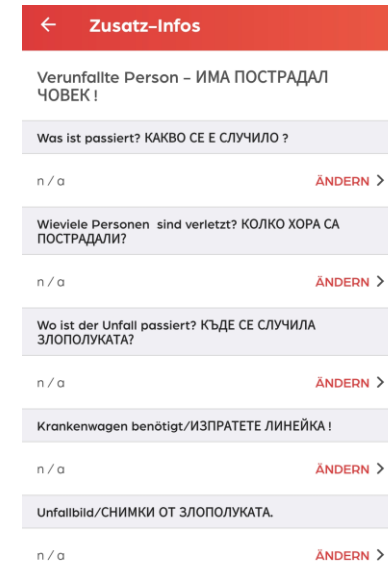




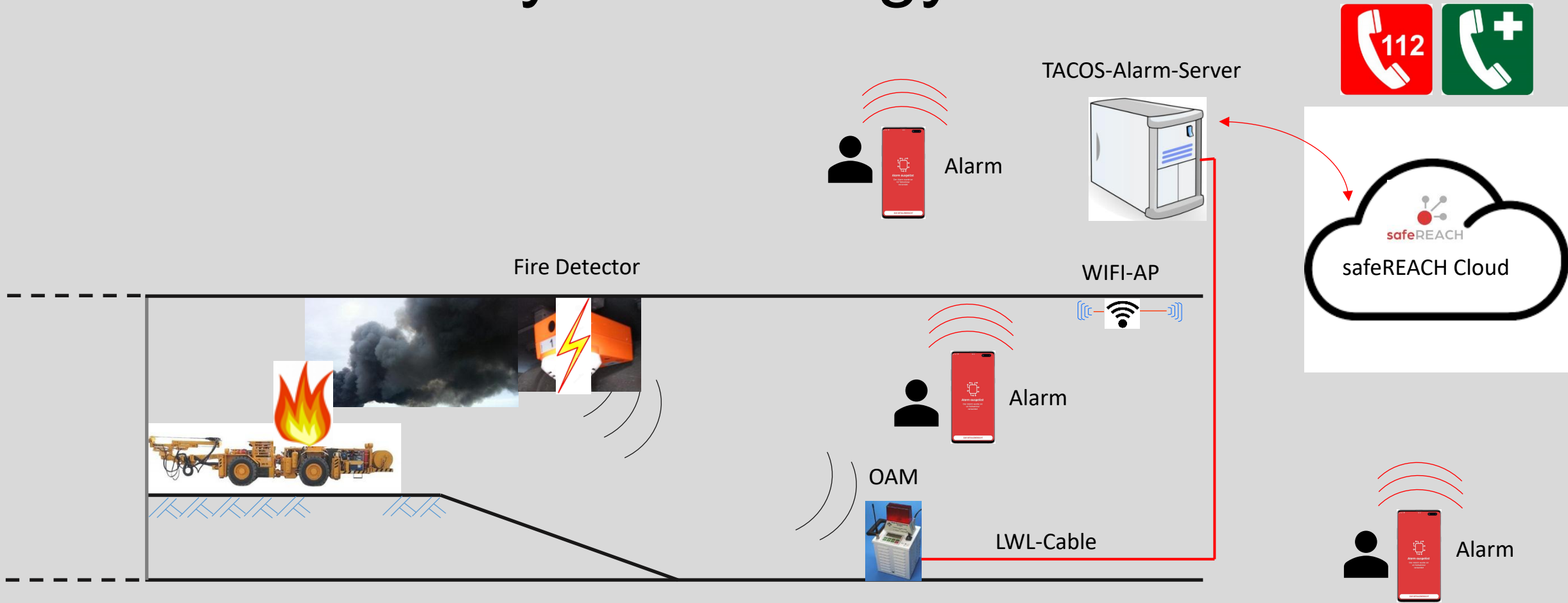
5. Tunnel Communication and Safety Technology

Alerting via Smartphone APP

- Use of “SafeReach” APP for Alerting in the Tunnel
- Interface to TACOS available – Exchange of Alerts
- Multilingual Alert Workflows
- iOS and Android APP



5. Tunnel Communication and Safety Technology

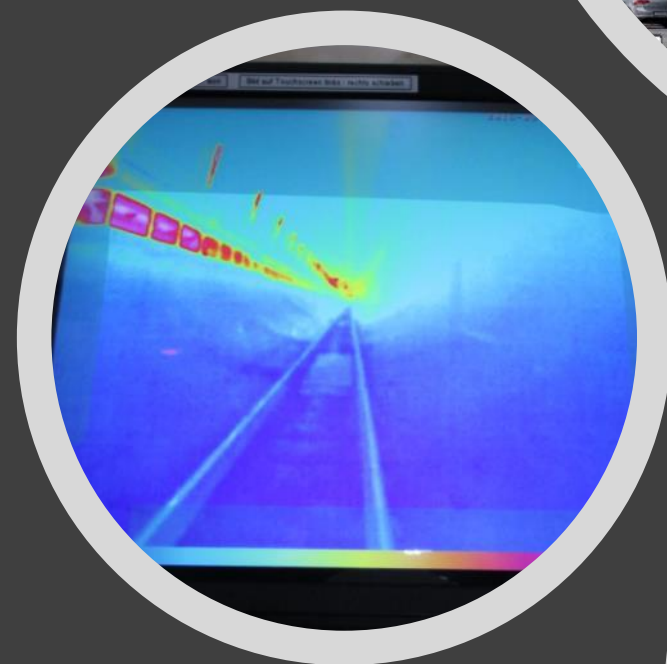
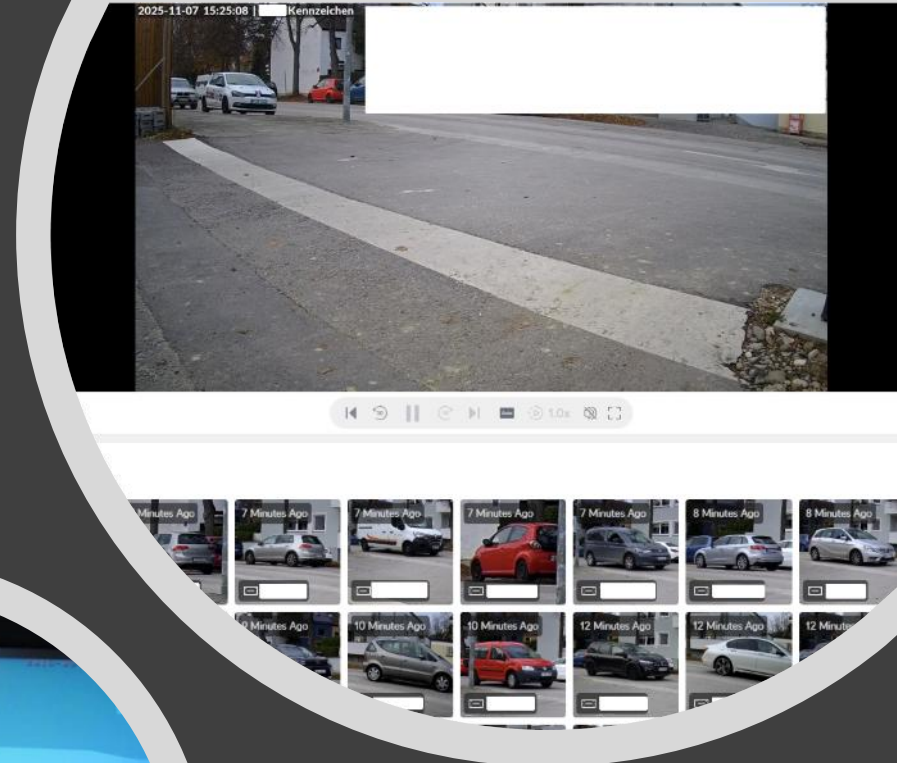


5. Tunnel Communication and Safety Technology

AI-based video technology

IP cameras with AI control

- IP Cameras with special lenses and thermal sensor cameras available
- Easy integration into the construction site's IP network
- Free control room software
- Access via website/smartphone app
- Access control via authorization matrix
- Alarm and event control via the cameras possible (person and license plate recognition)
- TACOS interface
- Centralized or decentralized storage of videos and images possible



5. Tunnel Communication and Safety Technology

Control Center Technology

- Installation and configuration of the complete control center
- Video wall and other equipment
- Event-based Camera Views

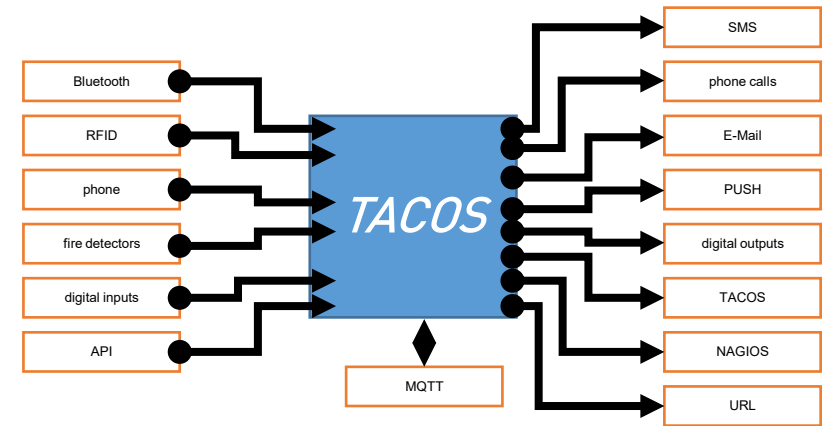


5. Tunnel Communication and Safety Technology

TACOS ... **T**unnel **A**larm and **C**ontrol
(**C**ommunication) **S**ystem

TACOS is an in-house developed Software Solution, based for:

- People Tracking and Localization
- Entrance Control
- Alerting and Messaging
- Rule-based Actions and Events
- Interface to other Systems
 - e.g. IoT-Interface



5. Tunnel Communication and Safety Technology

Radio over IP (VOIP) - Radios

ICOM „Advanced Radio System“

- Communication via the Standard WIFI-Network of the Construction Site
- Central Management and Configuration
- Unlimited User-Groups and “Channels” (Talk Groups)
- Full-Duplex
- Status and Short Message Service
- Communication with Mobile Phones possible
- Network Coverage based on the Quality of the WIFI-Network on the Construction Site
- Interface to TACOS available (People Tracking)





5. Tunnel Communication and Safety Technology

Voice over IP (VOIP) – Phone Systems (PBX)

- Asterisk-based IP Phone Systems
- Running Virtualized on Standard-Hardware or in the Cloud
- No license fees
- No User-Limits
- highly flexible utilisable



5. Tunnel Communication and Safety Technology

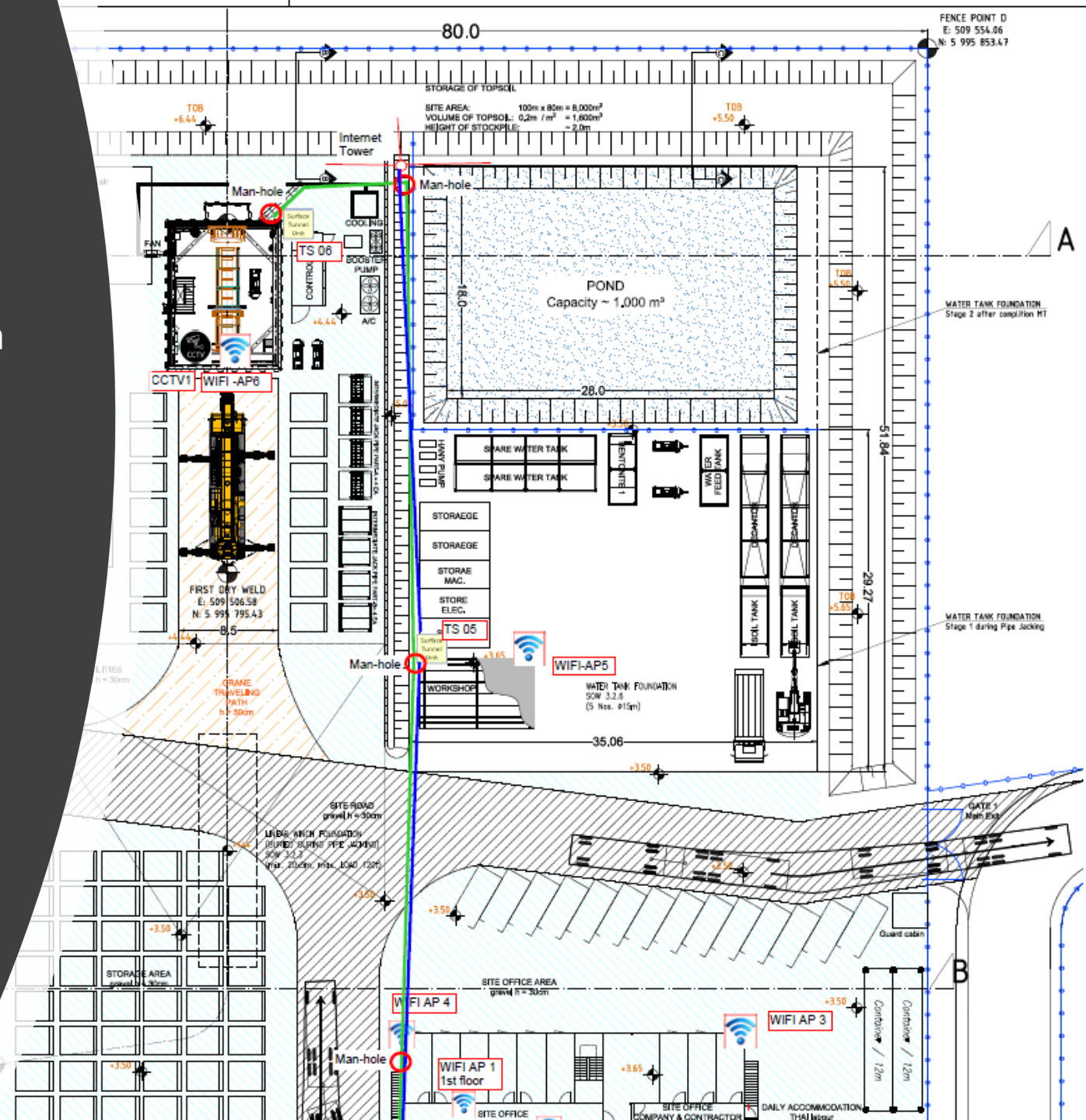
Network-Infrastructure

- IP-Network everywhere (Site Area, Offices, Tunnel, Other Buildings)
- ONE (IP-) Network for All
- Connections via Copper, Fibre, Radio Link, WIFI, VPN
- Network Virtualisation (VLANs)
- Professional, Controller-based, Wireless Lan (WIFI) Systems

6. IT Infrastructure

IT infrastructure planning for your construction project

- Joint planning of the IT infrastructure on the construction site
- Networking of the construction site
- Cable plans for the construction containers/barracks
- Provision of Wi-Fi to the site office
- Internet connection concept



6. IT Infrastructure

IT infrastructure planning for your construction project

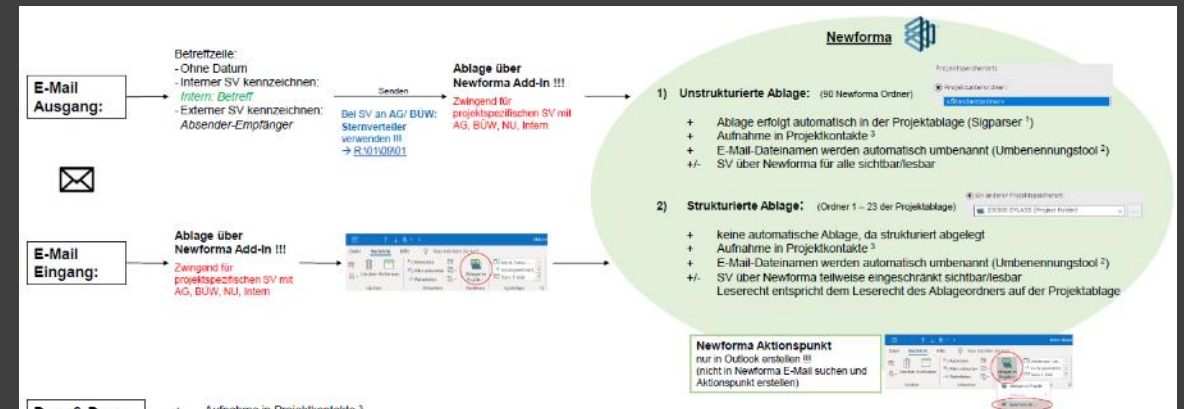
- Server and cloud infrastructure (Office 365 / local servers, virtual desktops, etc.)
- Construction site hardware or "Bring In Your Company Device"
- Remote access (connection from home office / headquarters)
- IT security concept

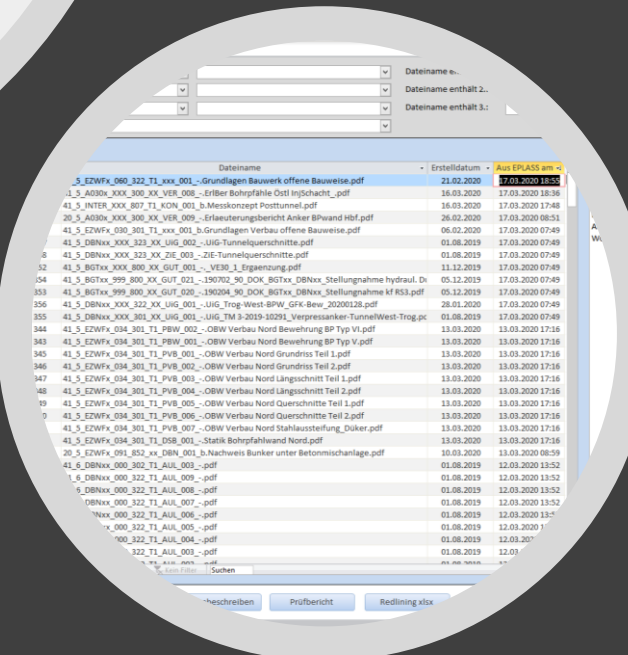
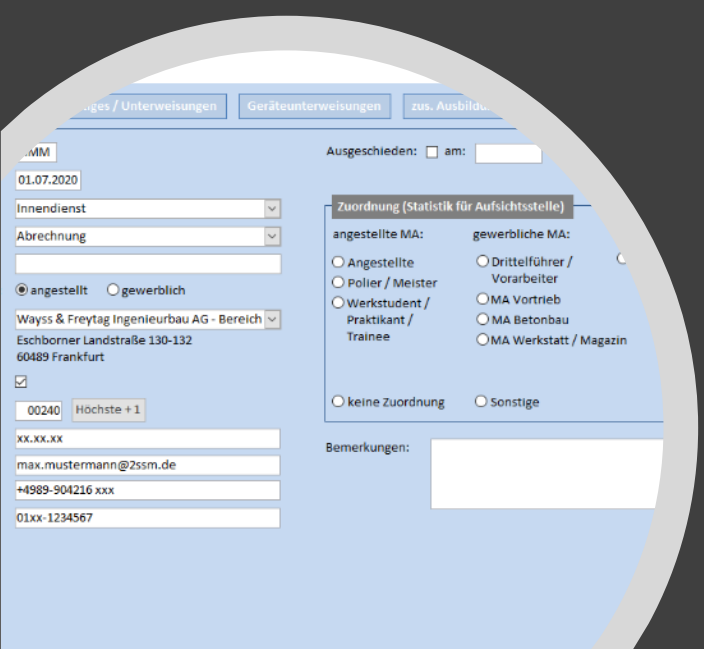
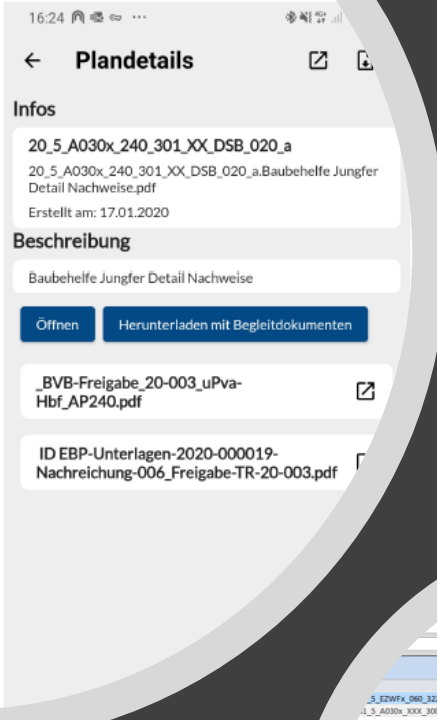
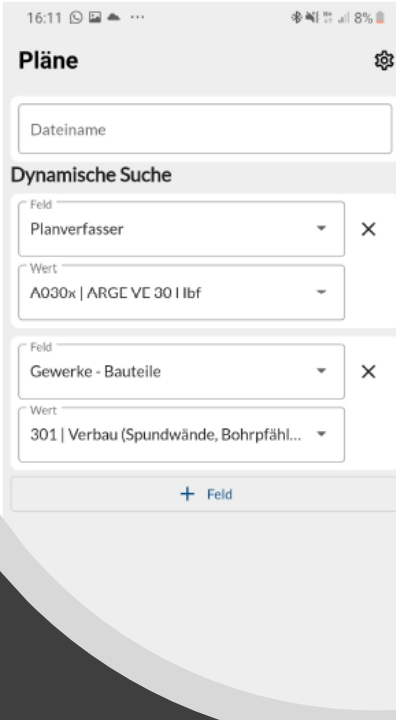


6. IT Infrastructure

Analysis of your construction site processes and support for digitalization

- Joint workshops to analyze your key construction site processes
- Suggestions for digitalization/optimization
- Practical implementation
- Process/workflow training



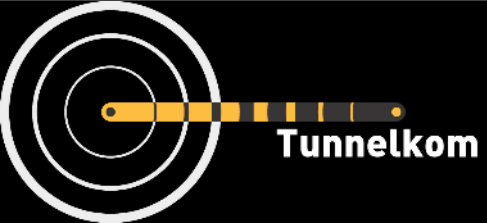


6. IT Infrastructure

Providing suitable, construction-specific software for your building projects

Thanks to our many years of experience with large-scale projects, we are very familiar with construction-site-specific software.

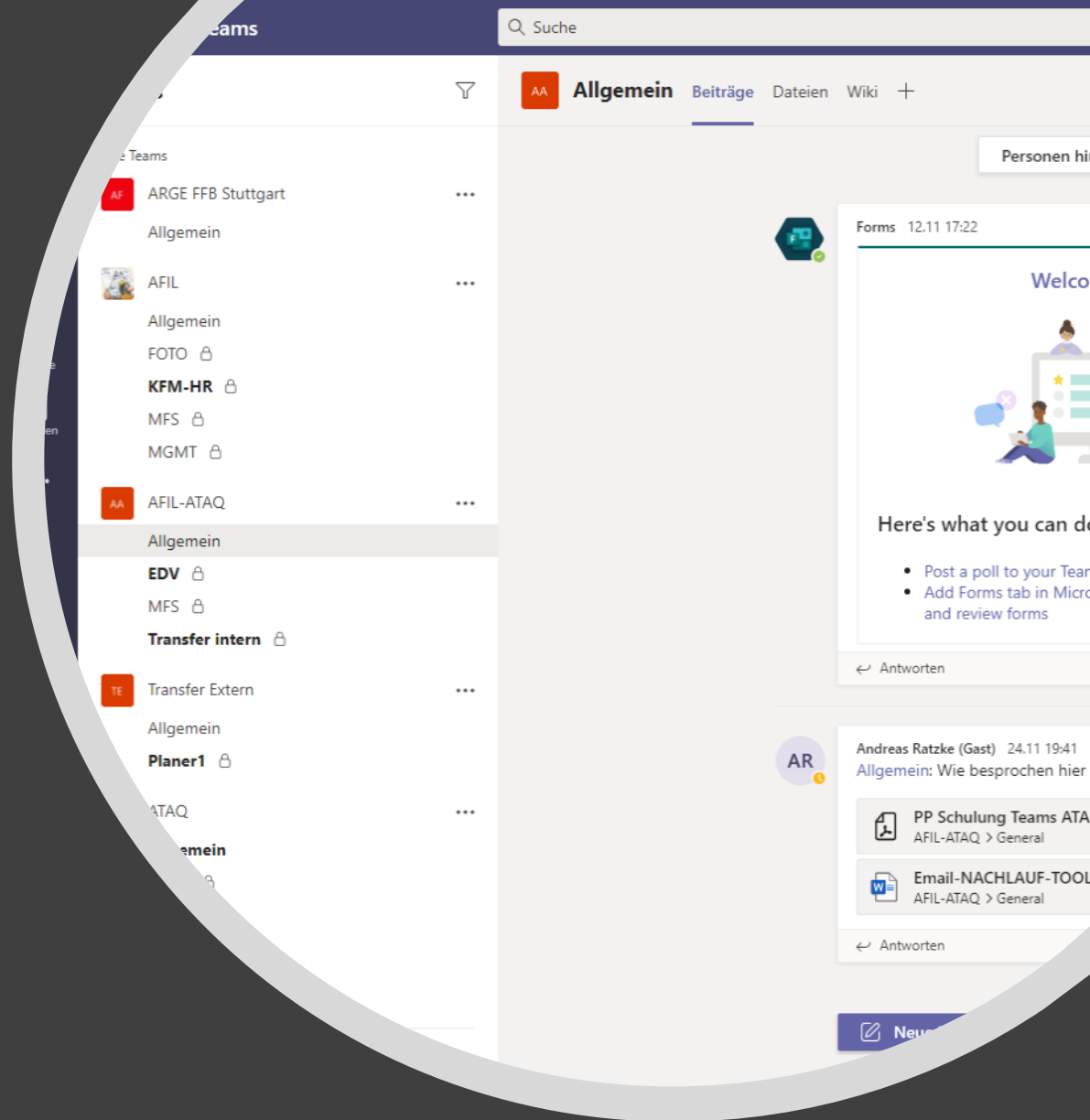
- We have close ties with many software companies and are happy to introduce you to their products.
- Through our partner companies, we can tailor the software solutions to your specific needs. We'll analyze your requirements and handle everything from development to implementation on your construction site.



6. IT Infrastructure

Configuration of Microsoft Office 365 Environments incl. Customization based on your Needs

- Configuration of Your customized O365 Environment (Tenant, Licensing, Teams)
- Joint Structuring of Your Project
- Hybrid-Solutions (O365 and Fileserver)
- User Management
- Introduction and Training



6. IT Infrastructure

Automation of your Email der project-related Emails

- Fully Automatic Filing of Emails out of Shared Inboxes and Personal Email Inboxes in Outlook
- Pre-structuring of Emails based on the Email-Domain
- Structured Filing of Emails based on central managed Filing Standards
- Multi-Filing based on Email Addressing
- File Naming based on QM-Standards
- Doublette Checks

Joint development with various construction sites



6. IT Infrastructure

- **Flexible IT-Support in case of need (Remote and onsite)**
 - Provision of IT-Supports for Your Construction Site (Remote or Onsite)
 - Staff with Site Experiences
 - Flexible Offsetting





Tunnelkom

We are digitalizing Your Construction Site

**Many thanks for your
attention!**

非常感谢您的关注！