

TELECOM

APPLICATION

CATALOG



“ We take **personal responsibility** for our customers every step of the way – from the initial kickoff to solution go-live and beyond. This commitment enables us to deliver the best possible service and experience for both our customers and theirs.”



Dr. Bernd Plannerer
Managing Director

Michael Kloos
Managing Director

CREALOG – INNOVATING THE FUTURE OF TELECOMMUNICATIONS

For over 32 years, CreaLog has led the way in AI-driven innovation, transforming telco applications and customer communication with cutting-edge solutions. We empower our customers with intelligent automation, real-time voice applications and data analytics – driving efficiency, customer satisfaction, and sustainable growth.

Our multi-service platform, shaped by years of collaboration with top network operators and enterprises, is built to meet the evolving demands of the telecommunications industry. It provides a robust foundation for AI-powered automation, bots, real-time analytics, and voice and data intelligence – enhancing customer engagement and operational excellence.

At CreaLog, innovation is fuelled by collaboration. With a history of customers in over 30 countries and an expert team spanning 13 nations, we develop tailored solutions that keep telecom leaders ahead of the curve. But our impact goes beyond automation. From reducing infant mortality in Angola through healthcare initiatives to powering emergency call solutions in Germany and Switzerland, our technology saves lives and strengthens critical communications worldwide.

Looking ahead, we are harnessing AI and large language models to redefine user experiences, deepen customer loyalty, and set new industry benchmarks.

As an independent, owner-managed company, we remain agile, innovative, and committed to delivering measurable value.

To all our customers – some with us for over 20 years – thank you for your trust and partnership in shaping the future of telecommunications.

Let's connect, collaborate, and drive the next wave of innovation together.



Michael Kloos



Dr. Bernd Plannerer

CreaLog – The Power of AI in Telecommunications.



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CREALOG

**SERVICE DELIVERY
PLATFORM**



THE CREALOG SERVICE DELIVERY PLATFORM

Communication service providers (CSPs) are facing an era of rapid transformation, with evolving network demands and increasing competition from global OTT services. To stay ahead, CSPs need solutions that enhance efficiency, drive revenue, and deliver exceptional customer experiences.

CreaLog offers a solution to this challenge with our CreaLog Service Delivery Platform, “Made in EU” and designed to seamlessly integrate into any CSP network.

Cloud support, geo-redundancy, comprehensive cluster capabilities, and telco-grade availability are all guaranteed. And that’s just the beginning. There are plenty more reasons to make CreaLog your service delivery platform of choice:

- **Flexible Solutions**

Our standard applications provide extensive out-of-the-box functionality, as well as templates and modules that enable you to manage all the crucial processes in your company, from network resources to customer interfaces. And it’s all supported by our powerful underlying CreaLog Service Delivery Platform (SDP).

- **Customizable Solutions**

All our solutions are extremely flexible and easily customizable, so it’s easy to adjust your system according to your needs. Our Service Creation Environment (SCE) provides a convenient graphical environment to help you create any customization you might need.

- **Customer-Centric**

We know it’s a challenge: You need to consolidate multiple applications into a single platform, while simultaneously introducing new applications regularly to keep up with the rapid pace of technological change in the digital world. Our customer-centric and cost-efficient approach makes sure you can do just that.

- **Proven Performance**

Over the last 30 years, we’ve completed projects in 30 different countries for our customers, including A1 Telekom Austria, Deutsche Telekom Group, Kyivstar, Post Luxembourg, Sunrise, Swisscom, Unitel, and Vodafone.

- **World-Class Support and Services**

We offer a complete portfolio of professional services, training programs, and certification programs, as well as ongoing support programs to ensure you receive the best possible support, whenever you need us.

- **Agile Experts**

We take great pride in being an agile organization – which means you benefit from our quick decision-making processes and have easy access to experts from each domain.

- **Support for All Networks**

Our solutions are available for all networks with a clear migration strategy: from time-division multiplexing (TDM) and next-generation networks (NGN) to IP Multimedia Subsystems (IMS) and virtualized or cloud environments.

- **Standards Compliant**

CreaLog is ISO 9001:2015 and ISO 14001:2015 certified.

OUR SERVICE DELIVERY PLATFORM (SDP) ARCHITECTURE

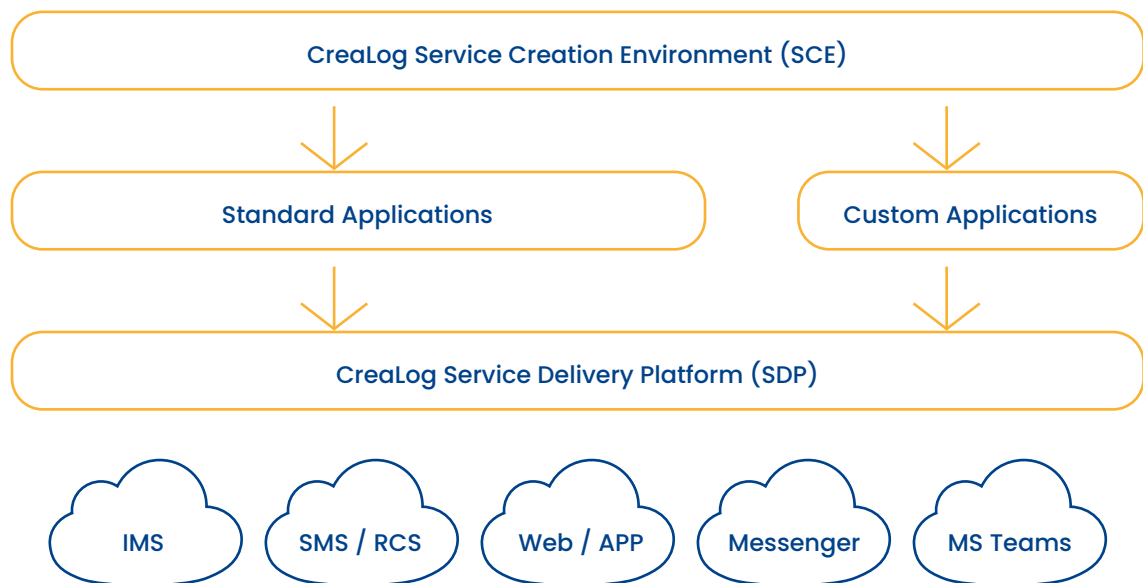
Our SDP is a comprehensive platform for all telecommunications applications including:

- Communication
- Signaling
- Media
- Messaging

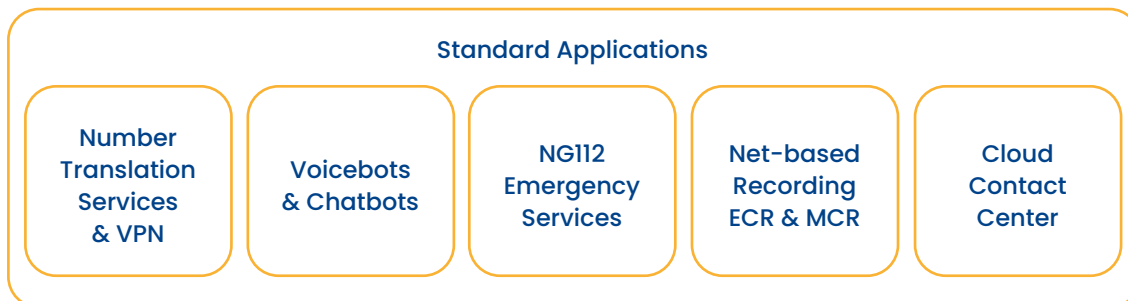
Our Service Delivery Platform (SDP) underlies all of our standard applications, and you can use it to build your own custom applications with our Service Creation Environment (SCE), as illustrated below:

This layered architecture is tailored to the specific needs of CSPs. The SDP access layer integrates seamlessly into any signaling network and can terminate all communication channels, including:

- Telephony (Mobile / Fixed)
- MS Teams
- Interactive web sessions
- RCS / SMS
- Messenger
- Web & App
- Video



CREALOG STANDARD APPLICATIONS



We offer a complete portfolio of proven telco-grade applications.

Number Translation Services (NTS)

Number translation services (NTS) are essential for CSPs. They cover many elements of telephony, from simple 1:1 routing for premium-rate or toll-free numbers to sophisticated voice VPN solutions.

Voice- and Chatbots (Bots & IVR, Speech-Enabled Services and Announcements)

Voice services are implemented on our SDP using the Media Resource Function (MRF). In addition, voice services like announcements, Bots & IVR, or speech services can be combined with other CreaLog applications, such as the Cloud Contact Center or All-Net Recording. With these services, CSPs offer their customers a broad range of technologies, including:

- Speech Services for Conversational AI and analytics
- Natural language speech recognition
- Speaker identification for Fraud Management
- Voice and Chat bots
- Omnichannel bots
- Conversational AI and analytics
- Agent-assist and post-call-analytics
- Recording
- and much more...

The omnichannel concept, which creates a systemic customer experience for CSP enterprise customers, has received a major boost in recent years through the use of intelligent algorithms. AI-supported dialogue systems that share AI algorithms and databases for voice and text services enable customers to interact seamlessly across communication channels 24/7.

Cloud Contact Center

Our Cloud Contact Center (CCC) opens up a world of opportunities for CSPs to approach their corporate customers with a compelling value proposition. Organizations of all sizes can now deploy contact center functionality without the need to invest in their own infrastructure.

NG112 Emergency Services

The NG112 standard initiative provides nationwide, unique and centralized specifications for the implementation of state-of-the-art, next-generation 112 call services within communications networks.

The CreaLog NG112 emergency call building blocks are designed to modernize Telco emergency call network and support multimedia communications, complying with Next Generation Core Services. Our IP based solution meets stringent network availability and reliability requirements. CreaLog helps to plan and deploy your NG112 solution with field-proven technology.

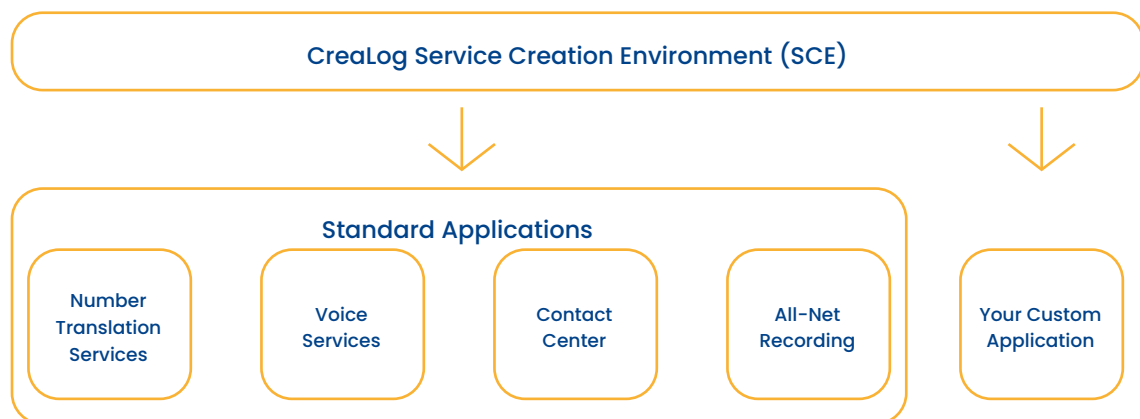
All-Net Recording

The capacity to record multichannel communication for Enterprises is increasingly in demand in many markets and already a widespread feature in contact centers. In addition, the EU's MiFID II Directive now requires financial institutions to have this capability, and the Directive is soon expected to expand to other industries, such as insurance and telemedicine.

Consequently, CSPs are faced with an ever-growing demand for the ability to record communication of all types (phone calls, SMS messages, etc.) – using any device on any network – and store it on the fly, along with its metadata, in a secure and encrypted manner.

Network-based recording integrates with a CSP's core network and supports network-based virtual PBX solutions like BroadSoft via SIPREC (SIP-based media recording) or MS Teams (policy based recording).

SERVICE CREATION ENVIRONMENT (SCE)



Our SDP easily integrates into any CSP network. We offer a rich variety of off-the-shelf standard applications, but we also use a powerful Service Creation Environment (SCE) that fully supports you in creating new and enhanced applications, enabling you to react quickly to changes in the market. With a fully graphical user interface, our SCE allows easy integration of databases and web services. Centralized configurations are supported, as are distributed deployments with a centralized but geo-redundant management back end.

The platform supports SIP and RTP standards (e.g., for IMS), as well as TDM protocols with INAP, CAP and MAP. The application layer is independent from the access layer, so migration from traditional TDM networks to IMS and 5G is easy. Applications can be used in both worlds at the same time. The optional CreaLog Service Broker and CreaLog Gateways applications can set up and manage coexistent connectivity to multiple telco networks.

CREALOG SERVER FUNCTIONS

Within the platform, the tasks are distributed to modular instances, such as:

- Signaling servers
- Media servers
- Messaging servers
- Application servers
- Database / file storage
- Microsoft Teams integration

Signaling Servers

Signaling servers are at the core of IN- and SIP-based applications, such as number translation, charging, and routing. They are integrated with any BSS or OSS infrastructure using the Diameter protocol.

They provide connectivity to all Telecom protocols, including:

- SIP / SIP-I
- INAP
- CAP
- MAP

Media Servers

Media servers are essential for announcement services, Bot & IVR applications, media mixing, and conferencing. They manage resources based on voice or MS Teams and support announcements and simple input by keypad, as well as complex user interactions using sophisticated technologies, including conversational AI for voice and chat bots, and speech analytics.

Messaging Servers

Messaging servers handle all SMS, RCS and other messaging traffic. They connect to any existing messaging center in the telco network. Standard protocols are supported, including:

- SMPP / UCP
- RCS / RBM
- HTTP/HTTPS
- MAP

The open interface architecture of these protocols allows them to support integration of alternative messaging formats like web interaction or social media communication.

CreaLog Application Servers

CreaLog application servers offer a flexible platform for all applications. This includes off-the-shelf applications as well as new applications that can be created rapidly and reliably using our powerful CreaLog Service Creation Environment (SCE).

The SCE's graphical user interface is easy to learn and features a powerful scripting engine. With its modularity and object orientation, it meets the reusability and teamwork requirements of large projects and teams.

The application server framework incorporates services for:

- Database integration and interaction
- Redundant data transmission
- Real-time synchronization
- Software distribution

The management suite allows easy administration and configuration of custom workflows. It features an integrated report manager that supports complex time-based and event-based reporting.

Standard connectors for flexible back-end integration (databases, web services, messaging, charging, operations, etc.) enable users to create fast and reliable services.

Our application servers are fully multi-tenant and offer powerful rights management features that enable complex user hierarchies consisting of users, groups, rights, and profiles, empowering tenants to create their own organizational structures using the rights management features and to use the platform as their own. This enables CSPs to offer the platform as a true, full-featured cloud service.

Additional processes for data cleanup, alarm management, and monitoring enable telco-grade operation of this platform.

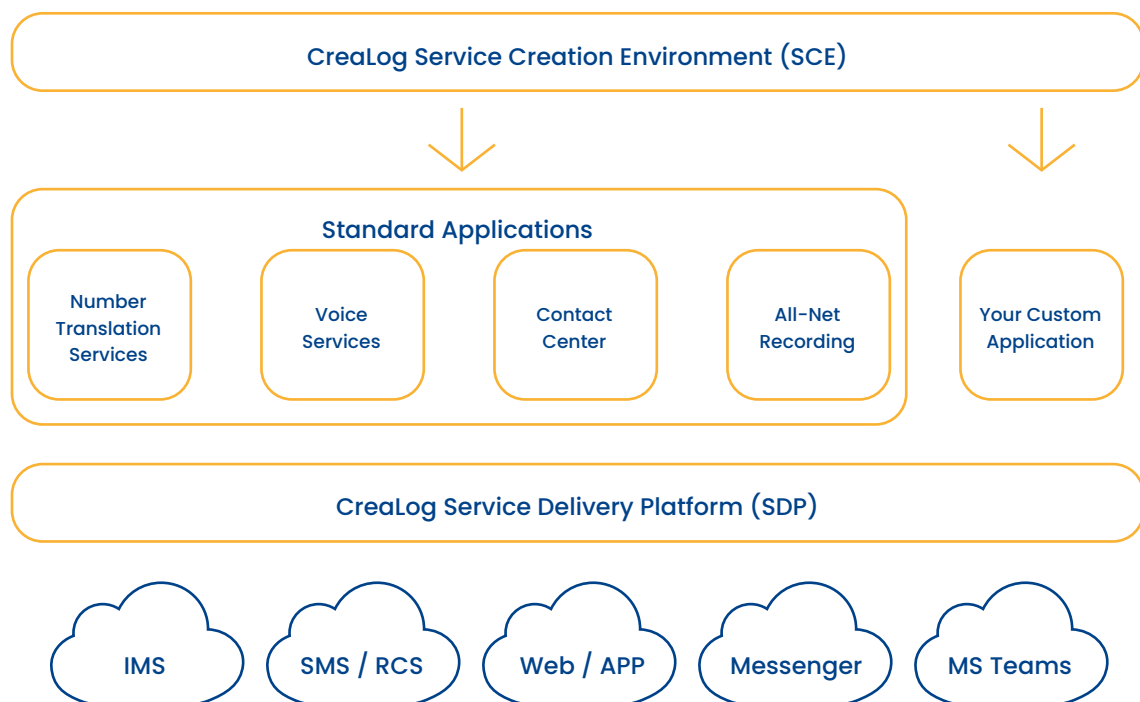
Microsoft Teams Integration

MS Teams integration for the CreaLog SDP platform is readily available and connects the popular MS Teams collaboration platform with our multichannel service platform, ensuring full integration with mobile and fixed communications, messaging, status management, provisioning systems, and automated onboarding.

Features like click-to-call, sending SMSs, a centralized address book, parallel ring, call pickup, and selectable CLI presentation serve to unify communication channels.

This creates new opportunities for CSPs to combine their MS Teams offer with their portfolio of mobile and fixed services, as well as with CreaLog's All-Net Recording and Contact Center solutions.

Here's the big picture:



CREALOG REAL-TIME CHARGING

CreaLog Real-Time Charging supports any type of voice, SMS, RCS, data, and content traffic for mobile and landline networks. Flexible workflows allow multi-play packages and service bundling and can be easily adapted

using the platform's graphical SCE, enabling CSPs to respond quickly to the challenges of new and changing markets. Emergency and toll-free service numbers are supported.

CLOUD-NATIVE DEPLOYMENT

Network operators and other communications service providers are currently facing considerable challenges when migrating their services into the cloud, yet cloud services are essential to flexible state-of-the-art communications services.

And speedy migration is important: CSPs must provide their customers with new solutions and services as quickly as possible so that they can significantly reduce their own time-to-market when developing new business models.

This is customers' preferred way to generate new revenue while reducing their own CapEx/OpEx and lowering the cost of developing, integrating, and operating new applications.

CLOUD-READY SOLUTIONS

Telcos need a flexible, cloud-ready, and universal service platform. A browser-based environment to develop and manage future-proof, value-added telephony services is crucial as well. This is exactly what the CreaLog Service Delivery Platform offers.

FLEXIBLE CLOUD SUPPORT

The CreaLog Service Delivery Platform supports vSphere, KVM, and Hyper-V as hypervisors, which is typical for private or on-premise cloud deployments.

In addition, public cloud providers offer on-demand computing resources, storage, and networking. By outsourcing IT to the cloud, enterprises and service providers can reduce infrastructure and operational costs and introduce new commercial models, like pay-per-use. Cloud service providers offer superior reliability and high availability in a scalable and secure environment.

CLOUD ORCHESTRATION

A strong orchestration framework is a crucial factor for success when managing large environments. OpenStack is a widely used open source cloud software and offers control of compute infrastructure, storage, and networking resources with a powerful orchestration and management interface.

Containerization platforms add another level of modularization for applications. CreaLog supports Linux with its microservice architecture for these environments, offering increased scalability and security alongside less compute resource demand.

CLOUD ENVIRONMENTS



VALUE PROPOSITION

Operators are facing tremendous changes, shrinking margins, and new threats from global OTTs.

Configurable and Flexible Solutions

CreaLog offers a complete portfolio of out-of-the-box functionalities, templates, and modules to manage all the crucial processes at your company.

Highly flexible, easily customizable solutions enable you to adjust your CreaLog solution to suit your company's needs.

On-premise or cloud deployment – the choice is yours.

Customer-Centric Approach

Our customer-centric and cost-efficient approach makes it easy to introduce new applications and consolidate multiple applications on one platform, enabling customers to master the challenges in today's digital world.

Cost-Efficient BSS/OSS Transformations

We take great pride in being an agile organization – which means you benefit from our quick decision-making processes and have easy access to experts from each domain.

Our solutions are available for all networks with a clear migration strategy toward IMS.

INTERNATIONALLY PROVEN PLATFORM

- References:
A1 Telekom Austria, Deutsche Telekom, Kyivstar, Swisscom, UNITEL, Vodafone
- Installations in 30 countries
- Fully redundant and clustered architecture designed for 99.999% reliability
- Central or distributed deployment with optional geo-redundancy

INTEGRATED PLATFORM FOR ALL APPLICATIONS

- Cloud-native
- Linux or Windows Server
- Voice and video telephony
- MS Teams / UCC
- SMS / RCS
- SIP/SIP-I signaling

COMPREHENSIVE APPLICATION PORTFOLIO

- Intelligent Networks
- Cloud IVR / BOTs
- Cloud Contact Center
- Call Recording
- Messaging
- Televote
- Message Broker

EASY ADMINISTRATION

- Browser-based
- API / Web services
- Multi-tenancy
- Open interfaces for charging, monitoring, and reporting

CENTRAL RESPONSIBILITY FOR PLATFORM AND PROFESSIONAL SERVICES

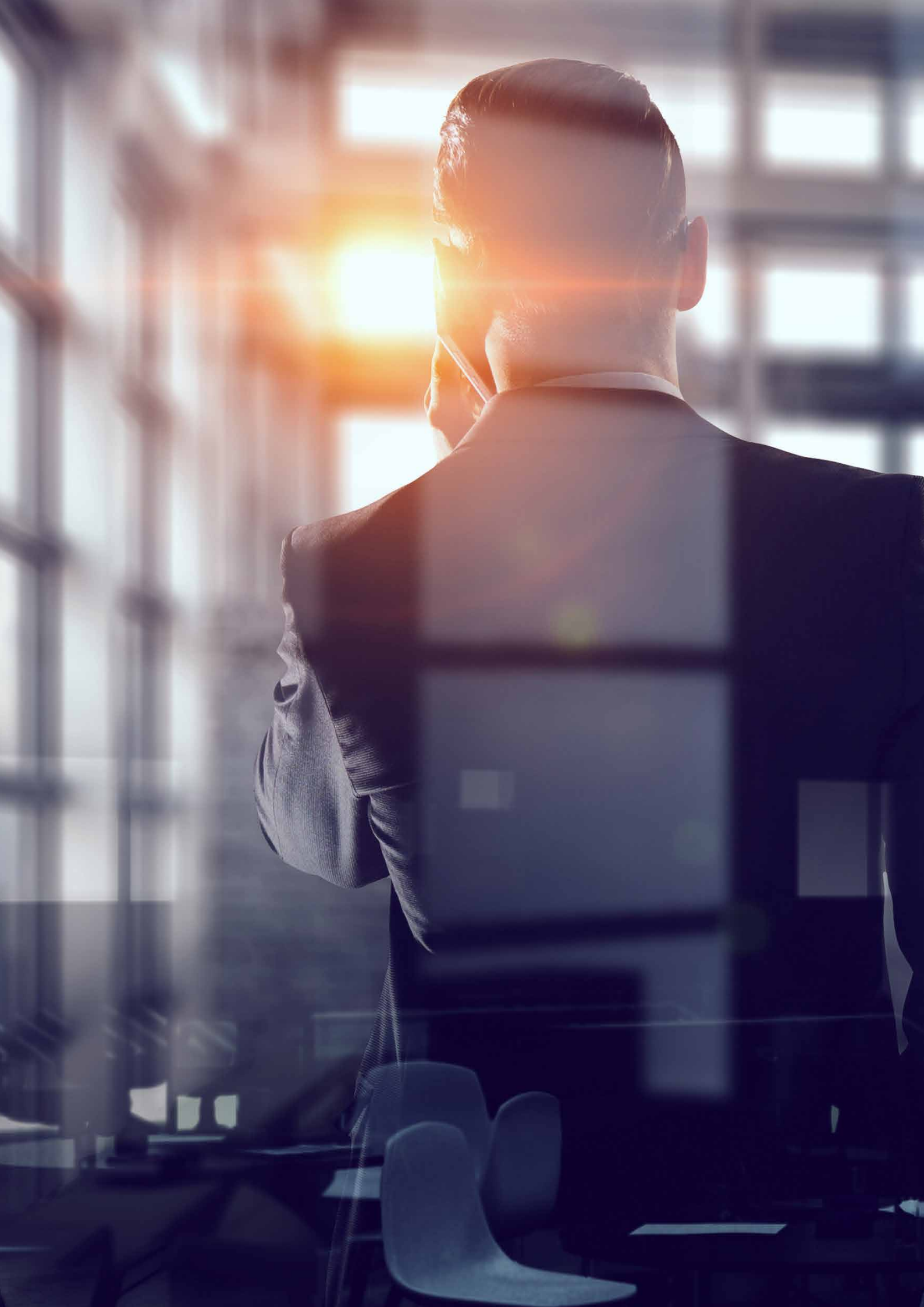
- Powerful service creation environment
- Full service portfolio for consulting, implementation, training, operation, and service
- Premium quality and "Made in EU"

CERTIFIED QUALITY

- ISO 9001 quality management
- ISO 14001 environmental management
- Numerous certifications and awards

ATTRACTIVE PRICING AND BUSINESS MODELS

- Buy
- Revenue share
- Lease / rental





**PROFESSIONAL &
SUPPORT**
SERVICES

PROFESSIONAL & SUPPORT SERVICES

PROFESSIONAL SERVICES

Reliable Business Partner

We offer a comprehensive portfolio of professional services designed to help you maximize the profitability of the CreaLog platform and its applications. As your trusted business partner, we support you at every stage: Planning, integration, launch, operation, and the continuous evolution of your business services.

Installation and Commissioning

Our professional services ensure seamless integration and maximum value from your platform and applications:

- **Analysis & Design:** CreaLog senior architects collaborate with your team to analyze network integration, use cases, and interfaces for full compatibility with existing systems.
- **Interface Configuration & Integration:** Our engineers work closely with your experts to configure, integrate, and verify our solutions within your telephony, data, BSS, and OSS environments, ensuring fast and reliable deployment.
- **Application Implementation:** From planning to live migration, we help design and integrate outstanding product offerings, ensuring secure and efficient service data migration.
- **Launch Support:** Our experienced delivery team ensures smooth integration, providing on-site assistance, system monitoring, and professional validation for a successful launch.

■ Comprehensive Project Management:

Each project is led by a skilled project manager who handles planning, coordination, and execution while acting as your single point of contact.

CreaLog offers optional end-to-end responsibility for planning, specification, execution, and reporting, ensuring your solution is delivered efficiently and reliably.

Training Services

The CreaLog Academy provides a comprehensive range of training programs, from introductory courses to advanced product specialist and certification tracks. These programs are designed to build extensive in-house expertise and ensure effective knowledge transfer at every level.

Business Consultancy Services

To maximize your investment, CreaLog offers valuable expertise to help you enhance your CreaLog-based service offerings and fully leverage the benefits of our products.

Our Business Consultancy Service draws on extensive global experience with CSPs, providing top-tier support to mobile and fixed-net operators. We help identify new business opportunities and unlock additional revenue streams for your success.

SERVICE CONTRACTS

Support Services

Our Support Services ensure maximum business continuity by providing full access to our expertise throughout the operational life of your solution. Tailored support programs are avail-

| | On-Site Preferred | On-Site Live |
|--|-------------------|--------------|
| Free spare parts and software updates | ✓ | ✓ |
| 24/7 on-call service with guaranteed response (90 min) and repair times (24 h) | ✓ | ✓ |
| 24/7 teleservice, on-site troubleshooting, and 2nd level support | ✓ | ✓ |
| Continuous system monitoring, dialogue optimization, and process consultancy | | ✓ |

able to meet the unique needs of your business. Our help desk serves as a single point of contact for all service contract customers. Depending on your service level agreement, support is available 24/7. Incidents that cannot be resolved immediately are logged and escalated to our 2nd and 3rd level experts for prompt resolution.

On-Site Plus Preferred

On-Site Plus Preferred is tailored for CSPs aiming to maximize the value of their solution. It offers guaranteed response and repair times, along with free software updates.

On-Site Plus Live

On-Site Plus Live goes beyond On-Site Plus Preferred, offering continuous monitoring, regular optimization, process consultancy, and comprehensive system audits. This proactive service is designed to identify potential system issues before they affect overall performance. Terms can be tailored to meet your specific business needs.

ADDITIONAL SERVICES

On-Site Support

This service provides you with a dedicated CreaLog engineer who becomes an integral part of your implementation or operations team.

Stand-By Assistance

Stand-By Assistance is tailored for critical operations. During changes to your operational environment, such as switch-overs or hardware/network modifications, we assemble a dedicated team ready to provide immediate support if needed.

System Audit Service

Our System Audit Service examines a CSP's internal processes, with a focus on the connections between organizational departments. This service identifies process weaknesses and supports the analysis of potential risk factors.





TELCO

ENTERPRISE

SERVICES

NG-IN / VOICE VPN / SIP APPLICATION SERVER

NG-IN / NUMBER TRANSLATION

Compelling Benefits for Operators and Their Customers

Many organizations leverage non-geographic phone numbers strategically, integrating them seamlessly into their customer contact solutions. These numbers offer advantages far surpassing those of standard telephone lines. For telephone operators aiming to differentiate themselves in the competitive landscape of voice services, CreaLog's cutting-edge Number Translation (NTS) and Intelligent Network (IN) Service delivers exceptional value. Key benefits include:

- **Future-Proof Technology**
CreaLog NTS is a SIP-based solution that ensures interoperability with present-day network equipment of any kind including IMS networks.
- **Independent of Network and Device**
Handles traffic from and to both IP and circuit-switched networks equally well. End destinations can be circuit-switched or IP based, fixed or mobile, PBX, ACD, and more.
- **High-Capacity**
Telco-grade platform with overload protection and options to limit traffic per customer and destination.

Benefit from our Long-Term Expertise in Large Networks of Tier 1 CSPs

CreaLog provides development, project management, and professional support services directly from the manufacturer. All solution design and development are carried out locally, tailored specifically to your needs, and Made in the EU.

- **Highly-Customizable**
Easily adaptable to a broad range of customer requirements and scales to fit all subscriber market segments.
- **Legal Compliance Guaranteed**
Designed to accommodate any and all legal requirements for premium-rate call services.
- **Allows Customer Self-Management**
The operator determines the level of control each customer can exert via a user-friendly GUI, empowering corporate users to do their own administration and provisioning.
- **Efficient Routing Made Easy**
Routing configurations can be adjusted quickly and easily. Customers can control routing options to align with their business processes and databases.
- **Flexible Operating Options**
Operation can be stand-alone or combined with NG-IN Centrex and hosted ACD and IVR functionality to offer customers a 100% hosted cloud solution.
- **Statistics for Customers**
Detailed statistics are available to provide customers with information on the use of their services.

NEEDS MET

- Multi-tenant IN platform
- Powerful user interface
- From straightforward routing to visually designed call flows
- Available add-ons:
IVR, contact center, call recording
- Optional speech-to-text and AI

BENEFITS

- Flexible platform for service providers, resellers, and distributors
- Platform for all TDM, NGN, and IMS networks including migration scenarios
- IMS compliant architecture with SIP AS and SIP MRF

VOICE VPN

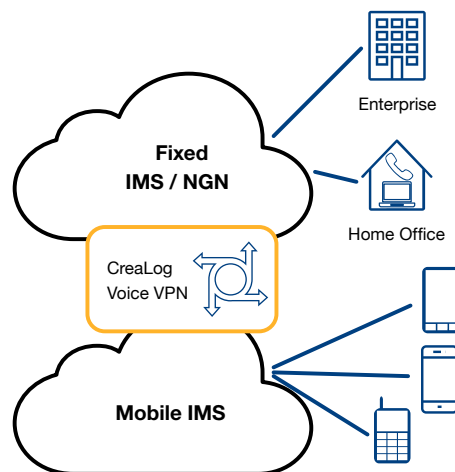
Large corporate customers often need solutions to consolidate the regional phone numbers of their offices and integrate numerous service numbers into a single, unified private numbering plan. The ideal solution is a virtual private voice network (Voice VPN) that operates within the telecom infrastructure and allows corporate customers to manage it independently.

Employees across all locations benefit from simplified internal communication, using short phone numbers defined within the private numbering plan. For outgoing calls, users have the flexibility to choose which number is displayed. Additionally, remote workers can stay connected by temporarily joining the VPN with their current fixed or mobile phone numbers, ensuring seamless reachability.

COMMUNICATIONS PLATFORM AND UNIFIED WORKFLOW SYSTEM

Voice VPN is a multi-tenant service powered by the CreaLog Service Manager Platform. It combines essential features such as number screening, number translation, and call routing for both incoming and outgoing calls. The Service Manager allows communication service providers (CSPs) to deliver Voice VPN as a cloud-based service to their corporate customers.

Corporate customers benefit from customized cost plans for both internal and external connections, while service providers gain the advantage of increased phone traffic and enhanced customer engagement.



Voice VPN

Dialing via Short Codes and Private Numbering Plan

BENEFITS FOR PROVIDERS

- Increased chargeable traffic due to reduced missed call attempts
- Comprehensive customization options
- Adaptable call patterns support service evolution
- Highly scalable configuration
- Standard interfaces for integration
- IMS/VoLTE integration
- Professional 24/7 support and maintenance

BENEFITS FOR TELCO CUSTOMERS

- Private numbering plan for multiple locations and mobile workforces
- Self-service via phone and web
- Cost control
- Usage statistics
- Convergent telephony solution with transparent coverage for fixed, mobile, and IP phones

BOT / IVR / MRF

The CreaLog Multimedia Server is a highly versatile and integral component of our IMS portfolio. This solution empowers service providers to swiftly deploy bots and multimedia services across both fixed and mobile networks.

NETWORK IVR

Many IVR functionalities can be used on IVRs in a telco network, offering a unified service environment and many service options, as described in the following examples.

Network-Based On-Hold Queue

CSPs can offer corporate customers and contact centers network-based on-hold queues with the option to upload individual corporate on-hold music or announcements.

Prepaid Card Top-Up

SIM card balances can be easily topped up using a scratch card or cash-code PIN, either through keypad input or voice commands.

MRF ANNOUNCEMENTS

Within an IN network, the Media Server and Special Resource Function (SRF) handle key tasks such as playing announcements, recording user input, collecting keypad inputs from callers, and enabling natural navigation through speech-to-text capabilities. Our Media Servers are seamlessly integrated into the IMS architecture to support:

- Ring-back tones
- Tones to alert users, e.g., when their mobile plan allowance is exceeded
- Tariff announcements, opening hours, and network-related information
- Advanced interactive network services

Announcements can be configured in two ways: by uploading pre-recorded prompts (sound files) or by using text-to-speech resources to generate speech output from typed text.

CreaLog Media Servers and SRF are capable of collecting user input through DTMF or speech recognition, while supporting all relevant industry standards, including SIP, MSML, and HD Voice.

NEEDS MET

- Efficient expansion and delivery of multiple services
- Platform interacts with several services and channels simultaneously
- Delivery of high-availability, carrier-grade services
- Support for NETANN, MSCML, MSML, AMSML, VXML, and other major interfaces

BENEFITS

- Deploys multimedia services across fixed and mobile networks with reduced cost and time to market
- Leverages IMS infrastructure with interfaces for IMS and fixed NGN
- Supports a wide variety of audio and video codecs

BOT / IVR / MRF

VOICE BOTS FOR YOUR CORPORATE CUSTOMERS

Voice bots

Voice bots deliver intelligent voice self-service and routing capabilities. Powered by AI-driven NLU/NLP, callers can freely express their intent and are seamlessly connected to the appropriate self-service option or a skilled service agent. Pretrained self-service modules ensure secure customer identification and authentication.

Advantages

Self-service should be an integral part of any standard service offering, as fully or partially automated solutions significantly reduce costs and enable the introduction of innovative services. Network-based voice bots operate 24/7, remain consistently friendly and patient – even when handling repetitive tasks – and never request time off.

With CreaLog's network-based Enterprise Interactive Voice Response (IVR), operators can provide their customers with advanced voice bots that feature AI-powered speech recognition, text-to-speech capabilities, and more intelligent AI services.

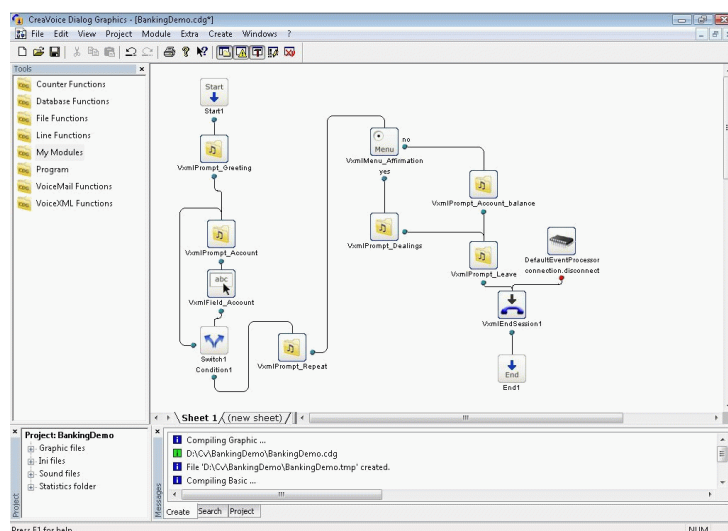
With support for over 100 languages and dialects, voice bots allow most users to communicate comfortably in their native language using speech recognition.

Conversational AI Service Creation Environment

Enterprises don't need to invest in specialized experts to implement the technology. The low-code CreaLog Service Designer empowers operators to easily create and manage self-services, as well as complex service workflows. With its user-friendly, multi-tenant browser environment, you can independently develop feature-rich dialogues and advanced routing scenarios with simplicity and efficiency.

CreaLog Professional Services

To ensure you gain maximum benefit, CreaLog provides comprehensive training in developing conversational AI solutions. We guide you through advanced and ergonomic Voice User Interface (VUI) design, offering practical advice on sound, persona development, and system training. During the testing and optimization phase, our team can work closely with you to help you unlock the full potential of your solution.



CONTACT CENTER

A CONTACT CENTER FOR YOUR CORPORATE CUSTOMERS

The CreaLog Contact Center solution delivers a proven, professional platform at an attractive price, helping you save money while unlocking significant opportunities. It empowers communication service providers to present a compelling value proposition to their corporate customers and offers exceptional scalability to meet a wide range of needs.

This solution caters to diverse users, from small businesses seeking a flexible Automatic Call Distribution (ACD) system to large enterprises requiring a feature-rich contact center capable of serving customers anytime, anywhere.

As a streamlined and efficient alternative to overly complex systems, the CreaLog Contact Center focuses solely on the features you choose to provide for your corporate customers. Its flexibility and scalability make it easily adaptable to the unique requirements of your business and your clients.

ADDITIONAL FEATURES

IVR / Bot

Corporate customers of network operators often begin with a contact center that provides basic routing capabilities. However, as their needs grow, they may look to expand the solution by integrating an advanced Interactive Voice Response (IVR) system. This addition enables efficient call steering, caller identification, and customer self-service, ensuring rapid first-call resolution and an enhanced customer experience.

Call Recording

This module facilitates call recording for documentation and quality management purposes. It also supports advanced speech analytics, including word-spotting, data mining, and transcription, enabling deeper insights and improved performance monitoring.

Email

When integrating email into the Contact Center, we apply the same distribution and processing principles as we do for phone calls. Using standard protocols, emails are routed based on specific criteria to the appropriate skill groups, ensuring efficient and accurate handling.

NEEDS MET

- Cost-effective and scalable
- Omnichannel routing engine
- Universal graphic workflow engine
- Effortless backend integration
- Standard based:
VoiceXML, CSTA, XML, JSON
- Lean and easy administration

ADDITIONAL PRODUCT OPTIONS

- Omnichannel bots for voice, email ...
- Transcription / speech analytics
- Customization to suit your needs

RECORDING & TRANSCRIPTION

SERVICES



RECORDING

With this solution, Telcos can set up a fully managed cloud-based recording solution for their business customers. Crealog is on their side as a solution provider, integrator and SaaS operator partner.

This enables Telcos to offer their business customers multi-channel recording and communication analytics. More than 10 major Telcos in Europe are successfully using this solution, which helps them to increase sales and retain business customers in the long term.

CreaLog's Multi-Channel-Recording captures calls originating or terminating in mobile or fixed networks, stores them in a secure and encrypted manner, and provides a player for recorded files. There are also options for storing and managing text messages, including SMS, RCS and Messenger. The latest addition is the possibility to record communications in Microsoft Teams. CreaLog's solution has been tested and certified by Microsoft.

The Multi-Purpose Recording Solution offers two main areas of application.

1. Compliance Recording:

One solution for all regulated employee or trade-related communication to reach MiFID II compliancy.

2. Enterprise Recording:

Interaction recording made easy for any industry. This helps a wide range of industries, such as public safety (PSAPs) and national security, insurance companies, contact centers, utilities, communications and media, to make faster and better decisions, accelerate sales conversion, and more effectively mitigate risk and resolve disputes.

Security first to ensure GDPR

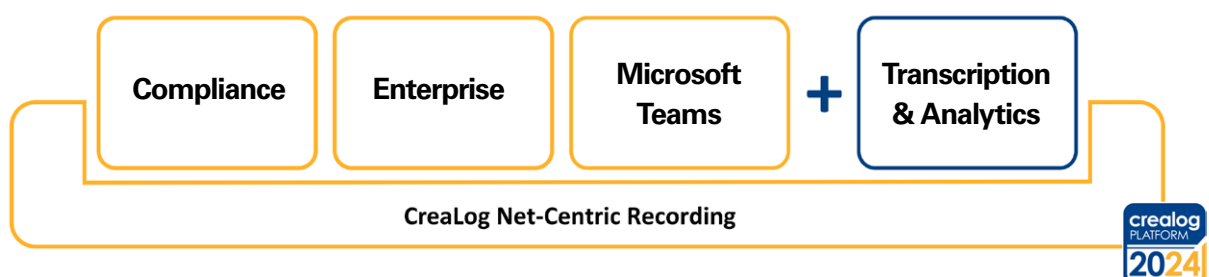
The recording platform encrypts calls as they are recorded, along with their metadata, using the public/private key principle. The associated private key is held by the B2B customer. Only the end customer's authorized users have access to the recording and associated data. Neither the telecom provider nor CreaLog itself can decrypt this data. If decryption is necessary, it is always done according to the principle of dual control - to ensure the highest level of data protection.

Storage options

Due to security concerns or policies, some customers (e.g. banks or government agencies) may require call recording data to be stored locally only. CreaLog provides an on-premise deployment that perfectly suits the needs of these customers.

Non-recording lists can be set up to define which employees' calls should not be recorded, e.g. employee representatives, medical officers or company counsellors.

Communication Recording Portfolio



COMPLIANCE RECORDING

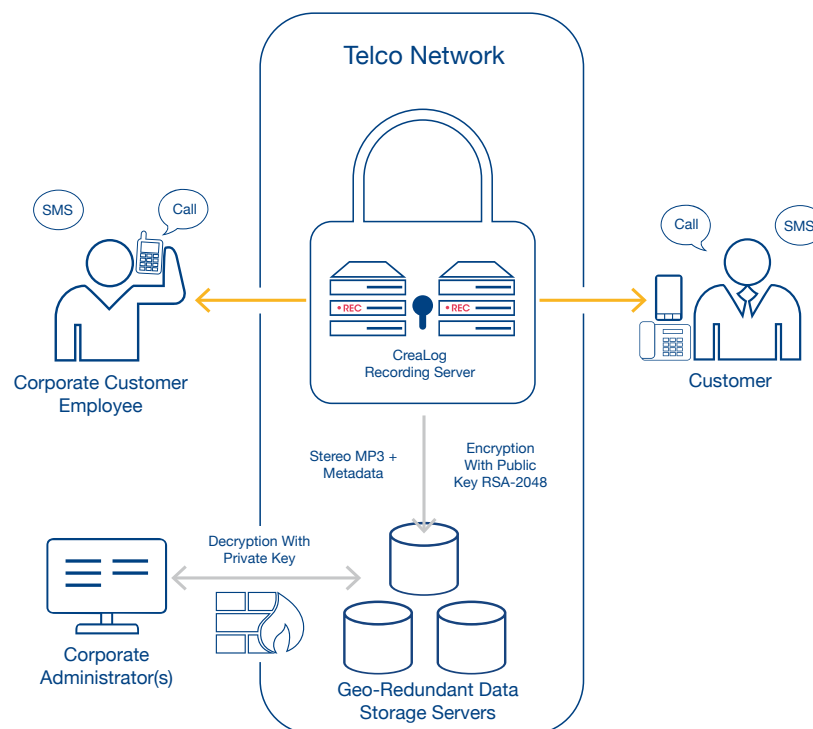
Around the world, the obligation of financial institutions to record the phone calls in mobile or fixed networks and text messages (such as SMSs, RCS, etc.) of their advisory staff involved in finance and trading is being extended to include mobile networks.

Network operators can offer the technical means for the banking industry to comply with their legal obligation to record mobile phone calls, SMSs, and RCS messages, opening

up an opportunity for them to implement a completely new range of services – and profit financially.

The CreaLog solution fulfills all the technical and legal requirements of MiFID II. The European Financial Market Directive states that all telephone conversations must be recorded and archived.

All relevant call information (metadata), including call date and duration, subscriber numbers, and more, must be stored.



NEEDS MET

- Helping customers to meet regulatory demands
- Generating new revenue opportunities
- Seamless recording of all incoming and outgoing calls, SMSs/ RCS, and metadata
- Secure, long-term storage
- Strong public/private key encryption
- Keyword search via speech analytics

BENEFITS

- Secure archive, easy search and playback
- Undisturbed user experience – on any device
- End users do not require training
- Guaranteed immutability of data
- Easy service roll-out within companies
- Support of storage options

ENTERPRISE RECORDING

Enterprise Communication Recording (ECR) is a network-based, multi-tenant solution. Highly flexible with a modular design, it meets the needs of different target groups within a cloud application. The main benefits are:

Documentation

- Preservation of purchase evidence
- Traceability of communication
- Documentation of communication

Quality assurance

- Screening and analysis of employees for supervisors
- Compliance with internal/external guidelines
- Fraud detection

ECR is based on the Recording solution and allows access to personal recordings of one's own communications. The recording participant has the option to delete or forward the recordings. Recordings can be tagged and annotated to make them easier to find later.

Personal key pair

The subscriber can define a personal private/public key pair to be used in parallel with the company's public/private key pair to encrypt recordings. This allows only the user to access their personal recordings.

This is where the decision is made whether to record a call, whether to enable the deny list function and what message to play (e.g. "this call is being recorded"). The communication is then encrypted and stored. All recordings can be searched quickly and effectively via a browser interface.

For flexible use, recordings can be emailed to the subscriber's account or to other parties, with an optional transcript.

All legal recording requirements are met (such as opt-in consent to recording, required encryption technologies, and the right of employees and customers to delete a recording).

Multiple fixed and mobile phone numbers and MS Teams ID addresses can be associated with a single ECR participant.

MICROSOFT TEAMS RECORDING

MS Teams Recording is a well-established communication channel for business customers and enables different types of communication for collaboration such as voice, video and chat.

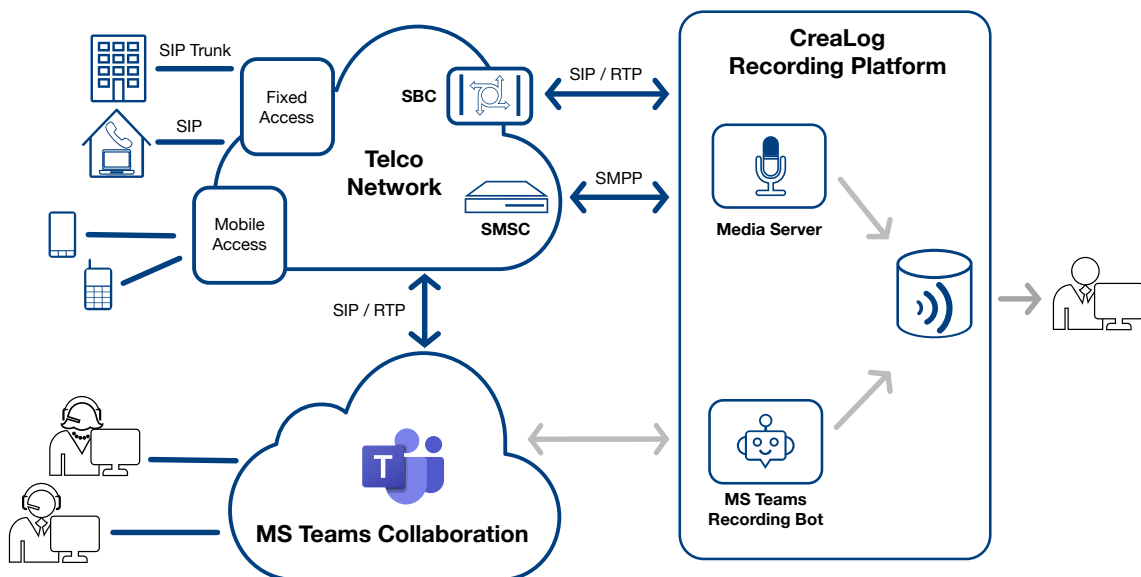
To this end, a recording bot is hosted in the Azure cloud, the Data Security Azure cloud is available in Europe to ensure compliance and resilience.

The tenants and subscribers for the recording are created in the Azure cloud. The MS Recording solution provides an administration interface for easy administration and policy management of users. This allows administrators to decide which users should be recorded and

configure the recording policies and configure the recording. The solution then records and captures the selected interactions of MS Teams-based communications.

This makes multi-channel communication a reality, helping business customers to break down siloed solutions while receiving additional voice processing services from the Telco's fully managed cloud.

Combined with generic CreaLog call recording, we record multi-channel communication and manage the data in a single solution.



 Solution certified for
Microsoft Teams

BENEFITS

- Full capture, storage, analysis, and monitoring of all-net communication recordings for MS Teams calls, mobile and fixed calls, incl. SMS
- Recording of MS Teams multimedia content
- On-premise or network-based storage
- Unified provisioning and support for processes and systems
- Consolidated view of recordings on all channels

AI-BASED ANALYTICS

RECORD, TRANSCRIBE AND ANALYZE CONTENT

Call transcription involves recording a call, converting it to text, and storing it as a text file.

Combined with methodical call analysis, call transcription provides customer service management with important findings on issues like customer satisfaction and service quality.

Once converted to text, a telephone conversation is easy to analyze. Operators can thus search for issues more easily.

ANALYZING DIALOGUE STRUCTURE

Apart from a call's actual content, the dialogue's structure also provides important insights. For example, CreaLog Speech Analytics helps determine how speech and silence are distributed during a call. Are there conversation lulls for any length of time? Does one dialogue partner interrupt the other? Is there double-talk in the dialogue? Answers to these questions also provide relevant information for customer service quality management in call centers, reveal room for improvement in process flows, and uncover possible education or training needs of individual employees.

Quality assurance, compliance with relevant policies, and fraud detection are guaranteed via real-time or offline analysis capabilities. In the case of recordings of employees for quality assurance, the system ensures that only authorized users have access.

REAL-TIME VS. DEFERRED ANALYSIS

CreaLog Speech Analytics enables analysis of ongoing calls in near real-time. Alternatively, call recordings can first be processed. CreaLog Speech Analytics will deliver the best results when the call parties' utterances can be analyzed independently from each other (stereo). The quality of the analysis results might be impaired if the analysis is based on a composite signal (mono).

In rare cases where even the system's advanced voice recognition leaves a word or sentence transcribed incomprehensibly, the associated audio file segment can be played back at the click of a mouse.

Deferred analysis allows for repeated analyses based on new relevant search terms.

PRIVACY GUIDELINE COMPLIANCE

When recording and analyzing phone calls, the privacy of the calling party's data must be ensured at all times. CreaLog allows for this by implementing all the technical and organizational measures for commissioned data processing that are required by the EU General Data Protection Regulation (GDPR) in effect since May 2018. This includes, for instance, our data security officer evaluating our existing data processing procedures by order.

NG 112

EMERGENCY

SERVICES



APPLICATIONS FOR CRITICAL EMERGENCY SERVICES

The foundations of today's emergency call infrastructure were laid over 20 years ago with fixed networks or NGN in mind. The main objective was to reliably connect a caller to a Public Safety Answering Point (PSAP) and to provide the emergency services with the subscriber's address from a dedicated database.

With the advent of mobile networks, the challenge of providing location information became more complex and was consequently addressed using triangulated data from the mobile operator's network infrastructure.

Technology has evolved and new capabilities have been introduced with the evolution of telecom networks to IMS with IP protocol based signaling and VOIP. Today, smartphones offer very precise GPS location information and new ways of communicating via video or text.

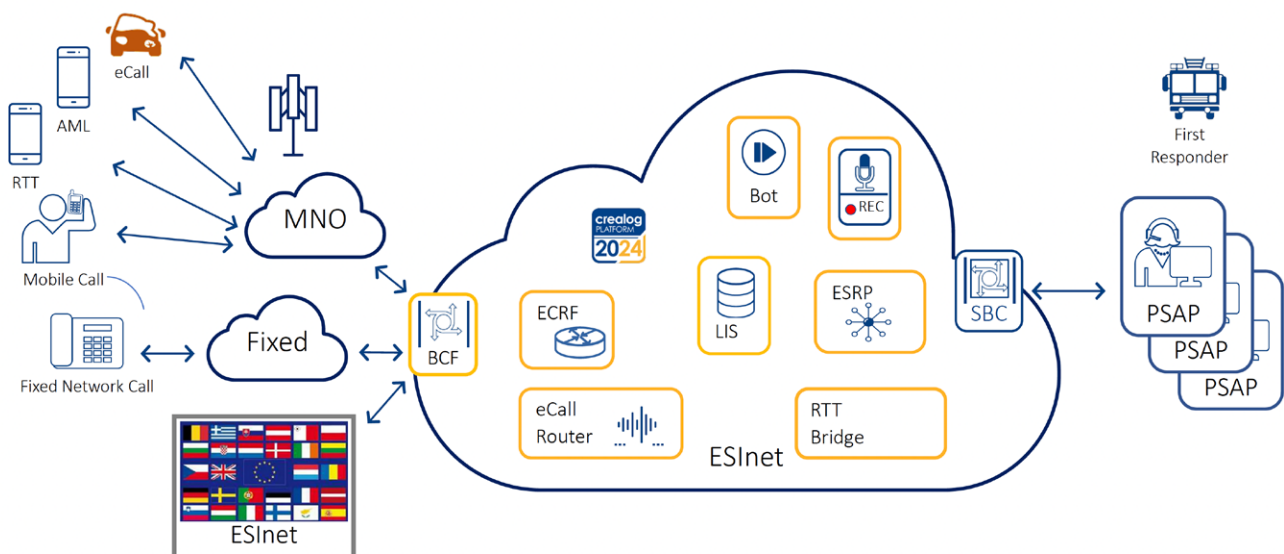
In addition, every car must have built-in eCall capabilities to call for help in the event of an accident.

The new European NG 112 standards now provide a transnational framework that encompasses the technical capabilities of all IP networks, smartphones and devices, as well as common communication methods.

BUILDING BLOCKS

The NG 112 standard initiative provides nation-wide, unique and centralized specifications for the implementation of state-of-the-art, next-generation 112 call services within communications networks. CreaLog helps you plan and deploy your NG112 solution with field-proven technology.

NG 112 Building Blocks



AML = Advance Mobile Location, eCall = emergency Call, ESNet = Emergency Service IP Network,
 ESRF = Emergency Service Routing Function, ESRP = Emergency Service Routing Proxy, GPS = Global Positioning System,
 IVR = Interactive Voice Response, LIS = Location Information Server, RTT = Realtime Text
 PSAP = Public Safety Answering Point

IMPROVED EMERGENCY CALL ROUTING

The CreaLog NG112 Emergency Call Routing solution is designed to help you modernize your emergency network and support multimedia communications to comply with the new NG112 standards. Our IP routing solution allows you to create an ESInet network that bypasses your core network without compromising the availability and reliability of the network that is essential to support emergency calls.

Maximum availability and improved accessibility are the key objectives of the system to support a wider range of emergency call traffic, from traditional voice calls to SMS and video calls.

NG112 call routing takes advantage of the centralized LIS server to retrieve the geolocation via HELD (HTTP-Enabled Location Delivery) protocol of eCalls from vehicles, mobile subscribers, AML and fixed phones. It matches the caller's location to polygon boundaries of

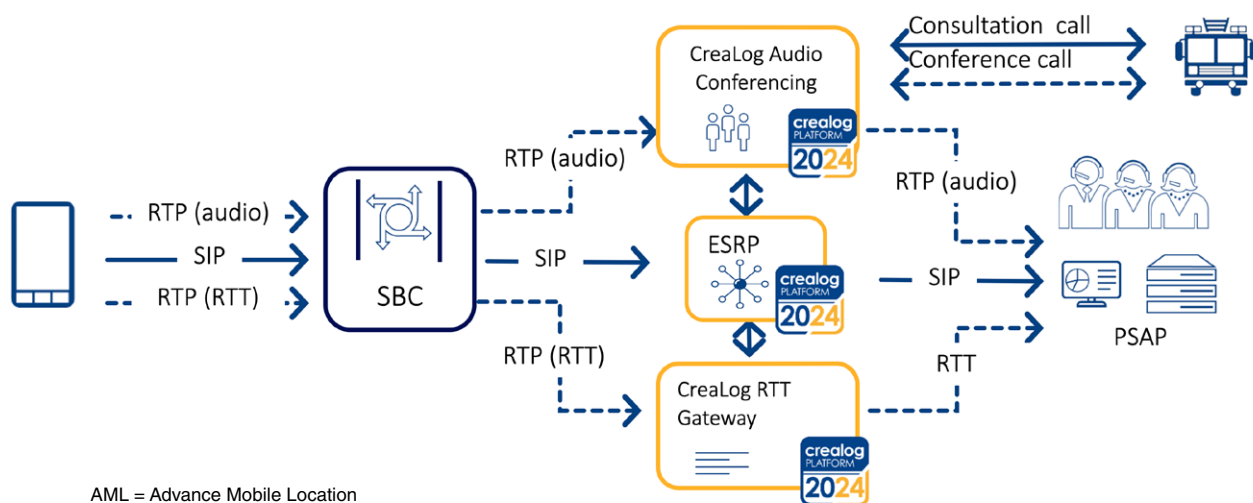
PSAP areas (or service boundaries) using the LoST (Location to Service Translation) protocol to accurately route the call to the appropriate PSAP (Public Safety Answering Point).

The caller's location is checked for each incoming emergency call, and it is determined if the call has to be routed to a foreign ESINET (via the forest guide) or routed to the next hub or PSAP in the own country. Else, the technical and organizational availability of the nearest relevant PSAP and calls are routed without loss of information.

Predefined routing profiles consider both predictable and unpredictable events to avoid network congestion. If a PSAP is unavailable or overloaded, the call is re-routed to one or more alternative PSAPs that meet the criteria of the emergency call, based on policy.

Greetings can be used to play IVR announcements and proactively inform callers of known major incidents. Standard greetings reduce the number of unwanted calls.

RTT Support Systems



AML = Advance Mobile Location
 eCall = emergency Call
 ESInet = Emergency Service IP Network
 ESRP = Emergency Service Routing Proxy
 PSAP = Public Safety Answering Point
 RTP= RealTime Protocol
 RTT = RealTime Text
 SBC= Session Border Controller
 SIP= Session Initiation Protocol

RTT SESSION ROUTING & CONFERENCING SERVER

The CreaLog NG112 solution provides emergency services with accessibility for the deaf, deafblind and hard of hearing. The standards-based Real-Time Text (RTT) protocol enables text chat for the hearing impaired while maintaining the voice call. This results in advanced routing capabilities of the ESRP to support RTP with RTT and voice in the same call session. In addition, a dedicated conference bridge provides consultation calls with first responders.

NET-CENTRIC ECALL MODEM

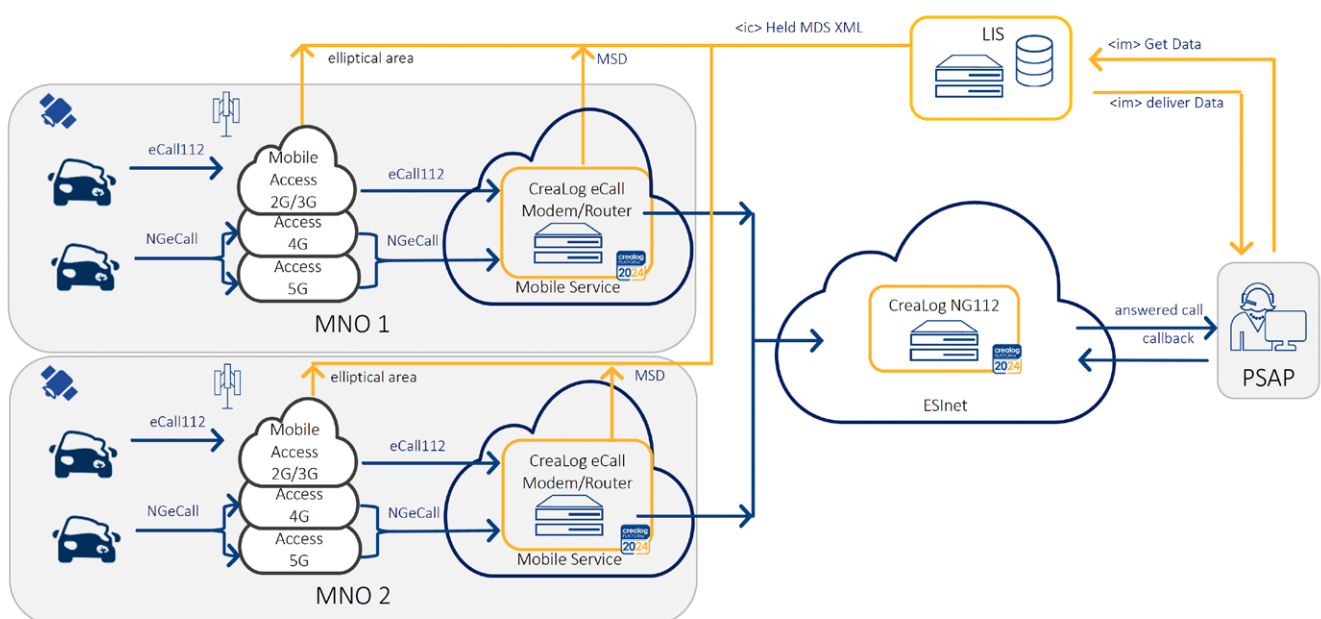
Traditionally, an eCall is activated automatically (or manually) by a car's In-Vehicle System (IVS) when sensors inside the car detect a serious accident. The Minimum Set of Data (MSD) information transmitted includes not only

the location of the caller, but also additional data such as car model, direction of travel and more, which is decoded by the eCall modem.

CreaLog's Net-Centric eCall solution is not only designed to receive eCall112 calls from 2G/3G networks, but as well supports NGeCalls from IMS based networks, like 4G and 5G. It offloads the communication with the IVS from the regional PSAP. It stores the MSD (Minimum Set of Data) in the LIS (Location Information Server). The eCall is then routed as a voice call to the relevant PSAP. The location information and the MSD can then be retrieved in the PSAP either via LbyR (Location by Reference) or via the phone number of the car's in-vehicle system.

The network-centric eCall modem, as part of ESInet, provides advanced eCall handling and routing capabilities, eliminating the need for a local eCall modem at each PSAP.

Net-Centric eCall Modem



CENTRALISED LIS SERVER

The Location Information Server, or LIS, is a network node in the NG112 network architecture that stores the location data of the emergency caller for retrieval by the PSAP.

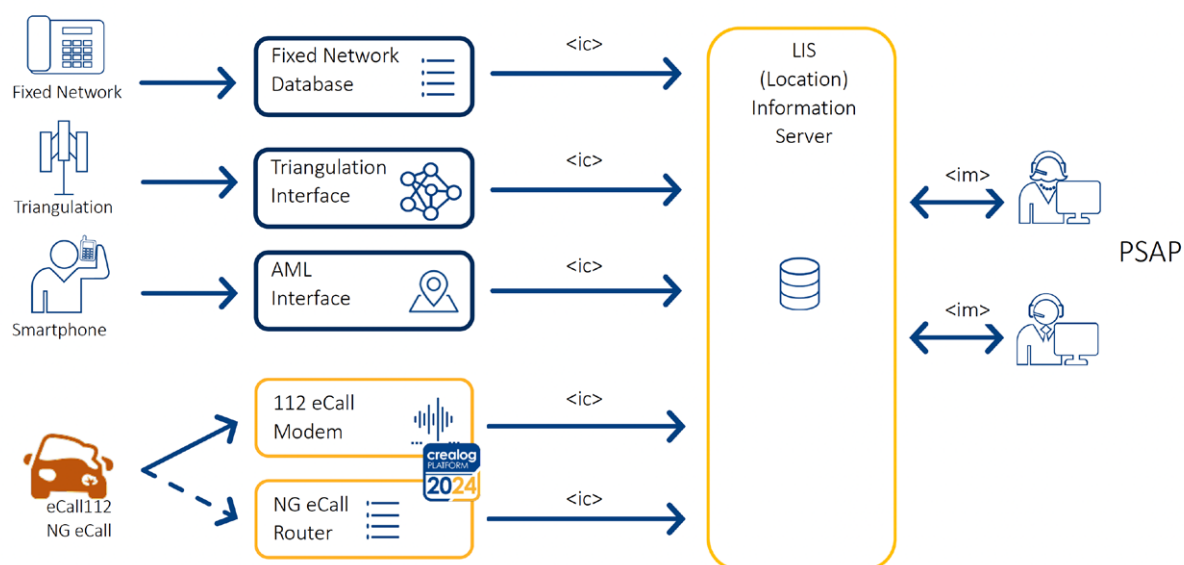
The LIS overcomes the historical limitations of location information only being transmitted via call signalling. It is a central server within the ESInet that unifies geolocation data from different sources, such as eCall 112, Advanced Mobile Location (AML) and the fixed network location database. It uses the PIDF-LO

protocol and supports HTTP-Enabled Location Delivery (HELD) to provide geolocation details.

AML is a built-in feature on iOS and Android smartphones. When a user initiates an emergency call, the location data is automatically sent via SMS or HTTPS, providing either GPS or WiFi information.

As location is the critical element for emergency calls, we enable PSAPs to retrieve location and all other call information from the location service via web services.

Location Information Server (LIS)



NET-CENTRIC CALL RECORDING

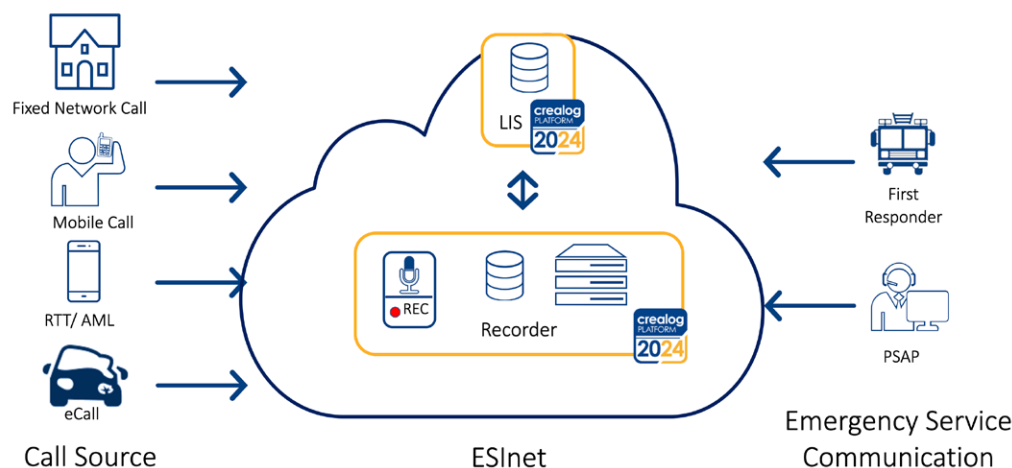
With the CreaLog Net-Centric Call Recording solution, the entire emergency call communication can be recorded, securely encrypted and forwarded to a designated PSAP without the need for a separate recording instance at each location.

The CreaLog Net-Centric Recorder helps you to keep track of all NG112 communications. As a central component of ESInet, it provides session recording and voice transcription for analysis and automated incident reconstruction. The CreaLog

system securely records 112 calls, radio, text, location and other multimedia communications and data, including CAD screens and other software used by the dispatcher during the call. By centralising data collection, it removes the barriers of data silos and manual intervention.

CreaLog Emergency Call solutions support a wide range of interfaces to carry traffic from multiple services and applications, allowing new functionality to be added as new technologies emerge.

Net-Centric Call Recording



ADVANTAGES FOR EMERGENCY ORGANIZATIONS

The CreaLog NG112 emergency call building blocks are designed to help you modernize your emergency call network and support multimedia communications to comply with the new NG112 standards. Our IP solution is designed to meet the following network availability and reliability requirements.

Maximum availability of the NG112 service and improved accessibility are the main objectives of the system to support a wider range of emergency call traffic, from traditional voice calls to text messages, video calls, etc.

CreaLog Emergency Call solutions support a wide range of interfaces to carry traffic from

multiple services and applications, adding new functionality as new technologies emerge.

The flexible routing options offered by our advanced emergency call routing ensure fast call response times and prevent lost calls due to non-availability or PSAP overload.

BENEFITS FOR NETWORK OPERATORS

Routing eCalls and 112 calls is transformed from a necessity into a billable value-added service, enhancing the CSP's reputation as a reliable partner for any communications solution.

A young woman with voluminous, curly brown hair is looking down at a silver smartphone held in her hands. She is wearing white wired earbuds and a black long-sleeved shirt. The background is a blurred outdoor setting with other people. Overlaid on the top left of the image is a dark blue box containing the word 'TELCO' in white, and below it, an orange box containing the word 'SERVICES' in white. Between these two boxes, the words 'VALUE-ADDED' are written in white on the dark blue background.

TELCO

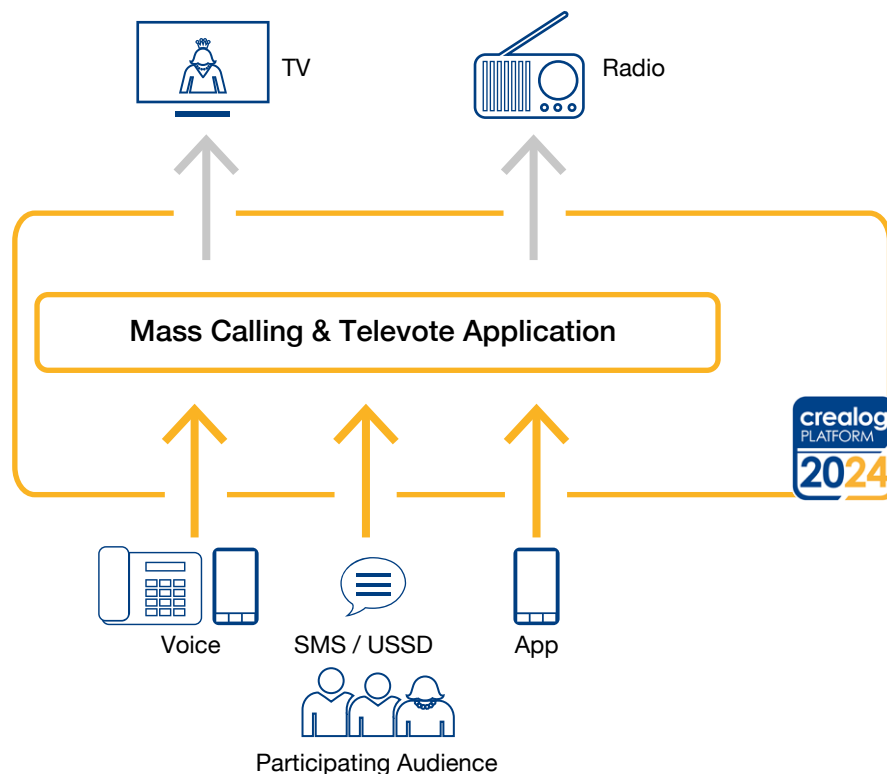
VALUE-ADDED

SERVICES

MASS CALLING & TELEVOTE

Mass calling, televote, call-in TV, and radio shows create thousands of lucky winners, millions of enthusiastic viewers and listeners, and happy broadcasters alike. Attractive shows generate significant revenue streams for the operator, media companies, and service providers by means of premium-rate calls or text messages.

The technical execution of these shows relies on the advanced handling capabilities and data processing functionality needed to deal with the high volume of incoming votes via call, SMS, or apps and to process these votes in real time. The CreaLog Service Delivery Platform and Televote application take care of both aspects, offering an easy to manage all-in-one solution combining state-of-the-art hardware and software components.



NEEDS MET

- Boosts revenue by leveraging TV and radio voting
- Vote for artists, super talents, and models
- Call-in shows for quizzes and contests
- Attracts broadcasters and TV production partners
- Processes millions of participants in real-time during a show

BENEFITS

- Integrates voting channels: voice, SMS, RCS, app, and web
- Real-time reporting and drawing of quiz and contest winners
- Multilingual speech recognition for all channels
- Open interface for TV screen engines
- Multimedia support for music and announcements

VOICEMAIL

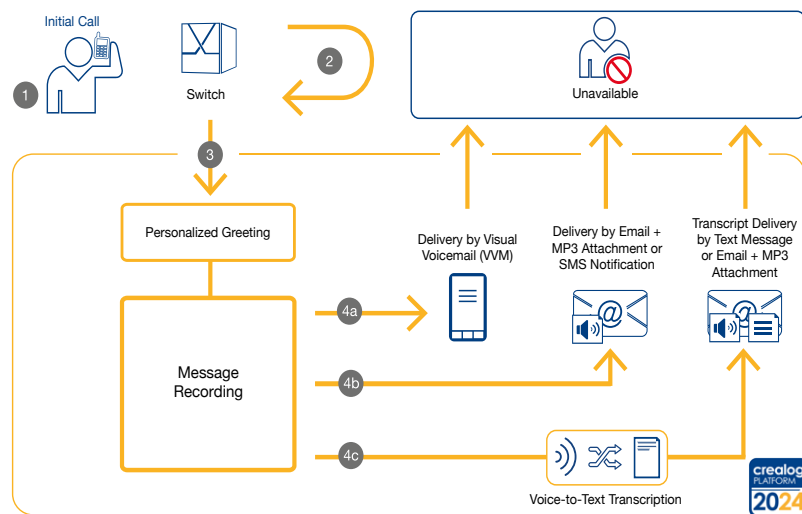
NEXT-GENERATION VOICEMAIL STREAMLINED INFRASTRUCTURE. LOWER TOTAL COST OF OWNERSHIP

CreaLog introduces an advanced voicemail solution that enhances user experience while leveraging the latest in speech recognition and voice-to-text technology. Designed for seamless integration, this solution simplifies voicemail management and optimizes infrastructure use.

With an intuitive interface, users can effortlessly receive and manage their messages through visual voicemail, email with audio attachments,

or transcribed text. By utilizing existing infrastructure, such as email for voicemail delivery, the process becomes more convenient and accessible.

This innovative approach ensures fast and efficient message retrieval, providing customers with easy access to their voicemail without the need for extended storage.



NEEDS MET

- Simplified user experience
- Seamless integration with existing communication infrastructure and handset features
- Significant reduction of operational effort (and costs) for network operators
- Carrier-grade service availability

BENEFITS

- Effortless and seamless message delivery via Visual Voicemail (VVM), email, and SMS
- Leverages state-of-the-art speech technologies, such as enhanced speech recognition and voicemail-to-text (incl. transcription/translation/summarization)
- Simplified infrastructure and reduced TCO

HEALTH SERVICES

INFANT MATERNAL MORTALITY PREVENTION

The Infant Maternal Mortality Prevention Reminder, as implemented at the Angolan mobile provider Unitel, is helping to lower infant and maternal mortality by an estimated 20% in pilot regions of Angola.

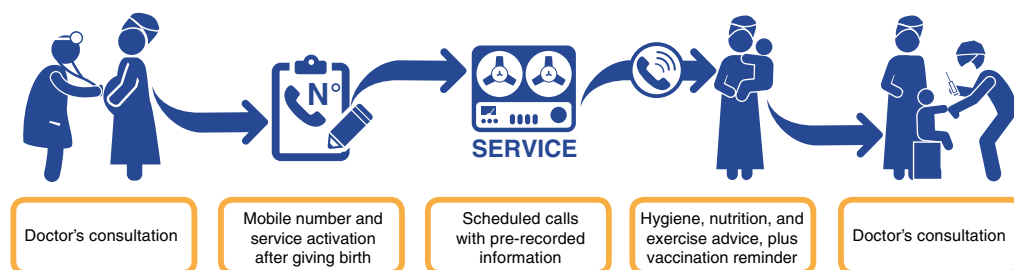
To give Angolan newborns and their mothers a chance at a better, healthier life, mothers of newborns needed to receive vital information by mobile phone. Due to the high illiteracy rate in Angola, text messages were not an option for the service.

A voice service was designed that uses dynamic voice messages based on the child's developmental stage at a given point of time and the reaction of the mother. The messages

contain important information for the mother and her newborn, ranging from hygiene tips and vaccination alerts to reminders to keep the next medical check-up appointment.

As soon as the mother sees a doctor after giving birth, she is registered with the service. From then on, the mother receives two calls per week for the next 52 weeks with important information relevant to her current situation.

The voice messages are read out in Portuguese and Umbundu, the most widely spoken language in Angola. This service offers Angolan mothers a chance to receive nearly the same important recommendations and tips that a midwife would pass on to them, regardless of their location.



A SERVICE BY UNITEL, PEOPLE IN NEED, AND CREALOG



FURTHER APPLICATION EXAMPLES

- HIV/AIDS awareness campaigns
- Information about local medical services/doctors
- General information about medications and treatments
- Information about risks and side effects
- Health education
- Remote monitoring of patients
- Increased awareness about nutrition, hygiene issues, and health risk factors

HEALTH SERVICES

COUNSELING ROUTING AND MANAGEMENT

STRENGTHENING CUSTOMER LOYALTY AND BRAND AWARENESS

First developed for countries like Angola, where good advice often isn't within easy reach, the CreaLog Counseling platform connects clients seeking advice with experts in the desired field of expertise. It is voice or text based and offers unrivalled ease of use with a low barrier to adoption.

Users can register for the expert portal via voice interaction and are then charged per minute of expert consultation or per text message. CreaLog Counseling is designed to reach people who cannot or prefer not to read written material. Subscribers can request an expert or consultant familiar to them or select a specialist from a given category.

In addition, the CreaLog Counseling service offers advanced communication capabilities, further improving customer loyalty and reducing churn. Customers can evaluate the advice they receive by rating experts and their contributions.

EASY TO IMPLEMENT

There's no need for service providers to build specialized internal skillsets for each and every kind of advice offered: The service relies completely on external sources of expertise. If individuals or organizations are paid their part of the fees collected for the services rendered, they will be easy to find and recruit. Last but not least, you can create steady, dependable revenue with these services.

NEEDS MET

- Creates sustainable value-added services
- Continuous revenue
- Access via mobile, landline, chat, app, SMS, or USSD

BENEFITS

- Enhanced customer loyalty
- Increased brand awareness
- Lowest usage barrier
- Web-based administration with expert rating

TELCO API

WE GENERATE ADDED VALUE

CreaLog has developed robust telco APIs for telecommunications providers, enabling them to enhance their service offerings and deliver greater value to customers.

APIs, or Application Programming Interfaces, serve as bridges between different applications and the operator's network, allowing seamless data exchange and function integration. They play a crucial role in software connectivity, ensuring smooth communication between applications. By leveraging HTTPS-based REST protocols, APIs enable secure data transmission over IP networks and the internet. The CreaLog APIs offer XML as well as JSON formatted data.

For telecommunications providers, APIs unlock significant opportunities. When standardized and integrated into existing environments, they allow developers and third-party companies to

access and enhance network services. Telcos can enable developers to incorporate network functions into their applications, expanding their service offerings. The API usage is fully integrated in CreaLog's rights and user management.

The APIs support a range of functionalities, including telephony, SMS and RCS services. Developers can integrate features such as SMS messaging, call initiation, and service billing into their applications. Additionally, Telcos can provide access to customer data, network insights, and location-based services while maintaining full control through access rights and usage policies.

By making these services available to external developers and businesses, Telcos can drive innovation, improve customer experiences, and unlock new revenue streams.

NEEDS MET

- Increases revenue with chargeable premium services
- Attracts service providers
- Flexible and easy to manage platform for SMS/RCS management, delivery, and reporting
- Offers access to resources for third-party developers
- Validates rules for content before sending
- Offers connectivity with many back ends
- Supports various protocol dialects or standards for third-party developers

BENEFITS

- Easy provisioning, administration, monitoring, and reporting
- Third parties provide applications and services using network assets
- Service and application are encapsulated and don't affect other services
- Definable message validation rules
- Multi-channel support for voice and video, SMS, RCS, and other network services
- Open interfaces for charging, monitoring, and reporting

A photograph of two women sitting at a wooden table, laughing heartily. The woman in the foreground, on the right, has dark curly hair and is wearing a white blazer over a dark green top. She is laughing with her mouth wide open. The woman in the background, on the left, has blonde hair and wears glasses and a light blue blazer. She is also laughing. On the table in front of them is a smartphone with a pink case, showing the time 4:59. There are also some papers and a brown leather folder on the table. The background is slightly blurred, showing a bottle and some indoor plants.

CUSTOMER

CARE

CUSTOMER CARE

CUSTOMER SERVICE PORTAL

Many telecommunications providers seek a simple yet efficient, network-based solution to streamline their one-number customer care portals. By utilizing a single phone number for all customer inquiries – such as sales, delivery, RMA, after-sales, or service – they require a robust call steering system. This solution must include flexible routing options, intelligent overflow management, and seamless message upload capabilities to meet their diverse needs efficiently. CreaLog leverages its experience gained through hundreds of projects with the call center industry to enable customer-centric solutions that make both customers and customer care agents happy.

Great Customer Experience

Delivering a great customer experience has become a necessity as Telcos seek to win customers through outstanding service and build brand loyalty. Customer experience is a real differentiator in today's market, so more and more of our customers are investing in cutting-edge technologies that offer optimized service and reduce user effort.

Natural Language Dialogues

One of the most effective ways to achieve both goals is by implementing AI-powered natural language understanding (NLU) for call steering

within your customer care voice bots. Using speech recognition, this approach simplifies the experience for customers by asking, "How may we help you today?" Customers appreciate the ease of describing their issues in their own words, without the need to navigate complex menus or match their queries to lengthy, pre-determined options..

Fast Connection

Quickly connecting callers to the service, improves customer satisfaction, increases Net Promoter Scores (NPS), and reduces misrouted or abandoned calls. This efficiency also drives greater automation and streamlines the customer experience.

Rapid Deployment

CreaLog's One Number Portal offers a distinct advantage in designing, deploying, and optimizing your call steering solutions. It empowers you to independently create and manage world-class natural language call steering dialogues, as well as configure routing and overflow rules with ease.

Automation with Focus on Customers

Our philosophy: Automate as much as possible, as seamlessly as possible - without losing the personal touch. We deliver the caller experience your customers expect, starting from the very first touchpoint at your contact center.

CUSTOMER SERVICE PORTAL – KEY FEATURES

- Keyword search
- Call transcription
- Text analysis
- Individual analysis and assessment
- Complies with current data privacy guidelines
- Multiple level method to anonymize personal information
- Scalable to any extent
- Uses technology from multiple partners for best possible results

SELF-SERVICES WITH VOICE AND CHAT BOTS

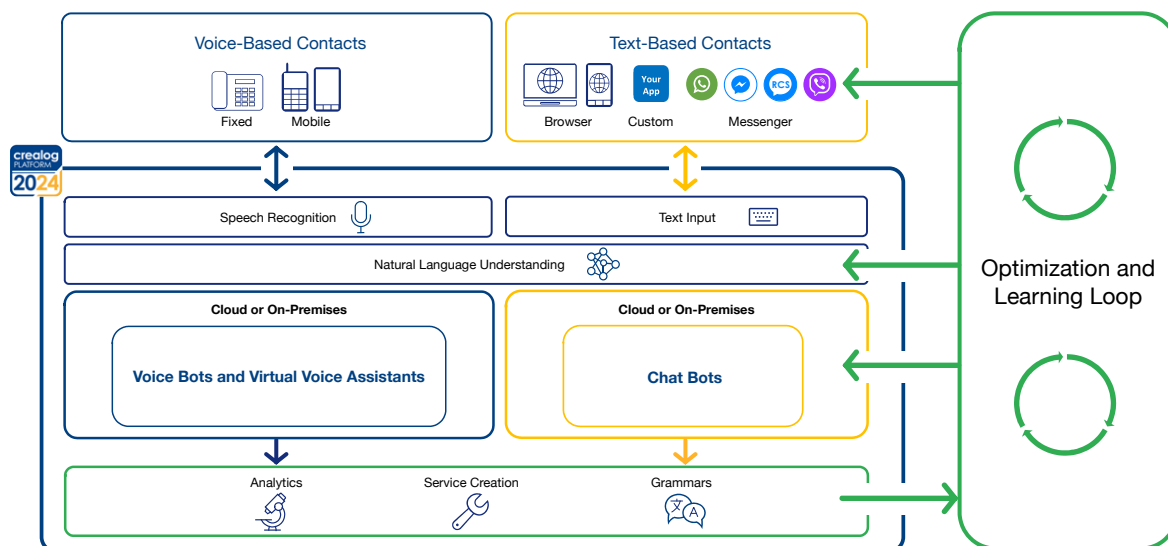
CreaLog's Customer Self-Service solution enhances customer care touchpoints across multiple channels, including voice, chat, messaging, smartphone apps, and the web. Designed to minimize operational expenses (OpEx), this solution provides operators with an efficient way to deliver a wide range of services in both prepaid and postpaid environments.

For subscribers, the system is accessible anytime, anywhere, through their preferred channel. It offers secure customer authentication and supports numerous use cases, including balance inquiries, prepaid top-ups, voucher redemption, service activation, SIM card lock/unlock, and much more.

Powered by speech-to-text and AI-driven intent recognition, the solution enables fully automated and seamless self-service experiences. The omni-channel bot supports over 100 languages for speech recognition and text-to-speech, ensuring unmatched flexibility and an exceptional customer experience. Additionally, open interfaces to CRM, CTI, and BSS/OSS systems allow for real-time services with high levels of automation.

EXPERTISE

CreaLog draws on 30 years of expertise in conversational AI and CX design to craft exceptional experiences for both companies and their customers. Our bot specialists empower CSPs to deliver seamless, modern, and user-friendly services that exceed customer expectations.



SPEECH ANALYTICS WITH AI

RECORDING AND TRANSCRIPTION

Call transcription captures and converts recorded conversations into accessible text files. Paired with AI-based call analysis, transcription delivers actionable insights into critical areas such as customer satisfaction and service quality.

Transcribed conversations make analysis significantly easier. Operators can quickly search for specific issues, identify recurring patterns, and implement improvements to enhance service outcomes efficiently.

ANALYZING STRUCTURES

The structure of a conversation provides valuable insights beyond the spoken content. CreaLog Speech Analytics evaluates the distribution of speech and silence during calls to uncover key patterns.

For example:

- Are there prolonged pauses?
- Does one participant frequently interrupt the other?
- Is there overlapping speech?

Answering these questions offers actionable insights to improve customer service quality. This analysis can identify areas for process enhancement and highlight training opportunities for individual employees.

AGENT ASSIST

Real-time analysis supports agents during live calls by offering immediate insights, such as:

- Suggested responses
- Automated issue categorization
- Identification of upsell opportunities

This empowers agents to handle customer interactions confidently and effectively, ensuring a seamless experience for all parties.

POST CALL ANALYTICS

CreaLog Speech Analytics provides flexibility by analyzing calls in real time or processing recorded conversations. With stereo input, the system independently analyzes each participant's speech for maximum accuracy. For mono input, automated speaker diarization differentiates between speakers, ensuring precise analysis even in complex scenarios.

In rare instances where advanced speech recognition cannot fully transcribe a word or sentence, the associated audio segment can be replayed instantly for clarification.

Deferred analysis allows calls to be re-analyzed with updated search terms, uncovering deeper insights and enabling continuous optimization of customer service processes.

DATA PRIVACY COMPLIANCY

Safeguarding customer data privacy is a top priority when recording and analyzing telephone conversations. CreaLog ensures compliance with the EU General Data Protection Regulation (GDPR), which has been in effect since May 2018, by implementing all necessary technical and organizational measures for commissioned data processing.

This includes regular evaluations of data processing procedures by our dedicated Data Security Officer, ensuring compliance and maintaining customer trust.

UNCOVER VALUABLE INSIGHTS

Ensuring quality assurance and streamlining processes are vital for managing customer interactions. CreaLog Speech Analytics automates call content analysis, delivering actionable insights that can be used to improve quality assurance, optimize processes, document interactions, and manage call centers more efficiently.

BENEFITS TO YOUR ORGANIZATION

CreaLog Speech Analytics also supports compliance with legal requirements for call documentation. Regulations often mandate the recording and archiving of consulting calls to provide evidence of adherence to regulatory provisions.

Relevant calls can be recorded, and keyword identification or transcription can be used to verify key aspects, such as whether investment consulting occurred. Additionally, legally significant details – such as informing customers of their right of withdrawal – can be documented and verified retrospectively with ease.

BETTER UNDERSTAND CUSTOMERS

Advanced root cause analysis enables you to identify the underlying reasons for customer inquiries. Gain insights into key questions, such as: Why do customers have questions about your products or services? What issues matter most to your customers? Are there specific reasons for customer dissatisfaction? What drives customers to associate your organization with a particular image? What are the primary causes of complaints or contract cancellations?

By addressing these insights, you can better align your services with customer expectations.

IMPROVE PERFORMANCE

CreaLog Speech Analytics provides a strong foundation for evaluating and continuously improving the performance of contact center staff. By analyzing recorded calls, you can pinpoint which team members need additional training and identify specific areas for development.

This targeted approach drives excellence across your customer support operations, ensuring the highest standards of service.

KEY FEATURES

- Transcription
- Speaker diarization
- Search & retrieval
- Intent and entity detection
- Sentiment analysis
- Keyword detection
- Personal identifiable information detection (PII)
- Summarization
- Language detection
- Translation
- Advanced generative AI technologies

BENEFITS

- Key insights for quality assurance
- Customer satisfaction insights
- Organizational image analysis
- Staff training needs identification
- Customer service quality evaluation
- Topic identification
- Support for one-number routing
- Automation opportunities detection





SERVICE

CREATION

NO-CODE / LOW-CODE / PRO-CODE

CreaLog offers comprehensive service creation environments for no-code, low-code, and pro-code development.

NO-CODE SERVICE DESIGNER

To begin, our browser-based Service Designer is an easy-to-use call flow designer. It's an integral part of the CreaLog Service Manager. It is simple and efficient, and facilitates the design and implementation of routing designs with voice and keypad user input.

LOW-CODE SCE

Taking service creation a step further, our powerful all-purpose low-code Service Creation Environment (SCE) enables users to easily create and change even highly complex workflows. It encompasses call handling, chat and voice bot interactions, email, SMS/RCS messaging, and much more.

Multilingual conversational AI voice and chat bot dialogues using speech recognition and text-to-speech are easy to set up.

The SCE features a fully graphical user interface and offers more than 100 icons for all kinds of applications. An integrated scripting engine assists in the development of complex applications with variables handling and module management. Feature-rich interfaces enable seamless external connectivity.

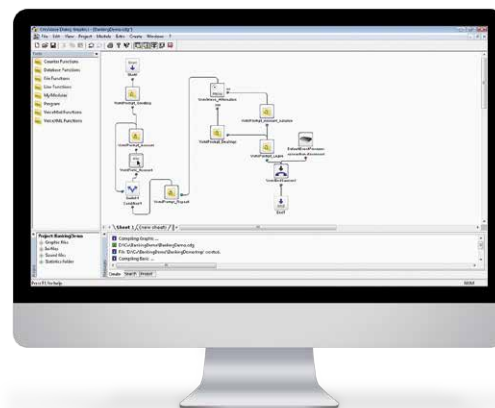
A set of ODBC functions is integrated for SQL database access. For web services, powerful parsers for JSON and XML can be combined

with all relevant protocols, such as HTTP/HTTPS, SOAP, and RESTful.

Icon libraries for connections with Diameter, LDAP, SMTP/POP3/IMAP, and FTP/sFTP, plus a useful set of universal functions for logging, reporting, tracing, and monitoring, are also part of the standard icon set.

Another comprehensive set of icons supports signaling servers with SIP or INAP/CAP/MAP.

Media resource functions (MRF) are also covered by a large set of icons for call control and audio and video streaming.



PRO-CODE INTEGRATION

An open interface for proprietary extensions, e.g. in C/C++, supports the integration of additional new functionalities. Lastly, the SCE supports modularization, code re-usability, versioning, and team collaboration for large projects.

LOW-CODE / PRO-CODE SCE FEATURES

- Easy-to-use, feature-rich, and powerful
- Unified service creation for signaling, media, web, and messaging
- Rapid prototyping
- Fast and reliable code
- Huge icon library for back-end integration and Telecom protocols
- Modularization, versioning, and teamwork
- Consistency check and context-sensitive online help
- Integrated scripting language with 300+ commands
- Open interfaces for C++, Java, Delphi
- Integrated resource management including audio studio
- Instant documentation creation



SPECIFICATIONS &

ABBREVIATIONS

SPECIFICATIONS

CreaLog Service Delivery Platform

- Layered architecture
- Distributed or central deployment
- 100,000+ concurrent contacts
- 5,000+ contacts per second
- Designed for 99.999% availability
- Geo-redundant architecture
- All components n+1 / cluster redundant
- Autonomous signaling / MRFP servers
- Hot swappable components
- Virtualization, VMware, OpenStack

Media Server Voice/Video (IVR)

- Up to 1,000 voice channels per server
- Up to 500 fax channels per server
- Up to 580 conferencing channels per server
- Speech recognition in 50+ languages and dialects
- Text-to-speech for 40+ languages and dialects
- Voice biometrics and speaker authentication
- Voice recording with speech analytics
- Conferencing for voice and video
- VXML 2.1, MRCP v1/v2, MSML
- SIP/SIP-I/SIP-T/SIP TLS(AES), (S)RTP
- ISUP/BICC/ISDN/CAS, E1/T1, STM-1
- G.711, G.726, G.729a/b, G.722
- AMR-WB, AMR-NB, EVS
- H.264, H.263, VP8, MPEG-4, 3G-324M
- Fax T.30, T.38
- WebRTC/OPUS

Messaging Server SMS/USSD/RCS

- 500 contacts per second per server
- Regular expression-based analysis
- Protocols: SMPP, HTTP, RCS, UCP, MAP, SIGTRAN

Media Server Web / Chat / Email

- 500 contacts per second per server
- Protocols: SMTP

Signaling Server

- Up to 300 conversations per second per server
- 2,000 parallel conversations per server

- IN suite with service control point (SCP) and assisting IP
- SIP application server
- Service broker
- SIP, INAP/CAP/MAP, MSML

Operations, Administration, and Maintenance (OAM)

- Multi-tenant / multilingual web user interface
- Configuration, reporting, service creation, and provisioning
- User interface for HTML, XML, and HTML5 for iOS and Android
- Suitable for operators, resellers/MVNOs, and end customers
- Rights management with users, groups, profiles, and rights
- Consolidated real-time and historical monitoring and reporting
- Mass provisioning interfaces (CDR, offline transcription, CRM)
- Diameter, charging CDRs, online/offline charging
- SNMP v2

Platform Servers

- Standard Oracle database server or PostgreSQL
- Real-time server for synchronization and counting
- Distribution server for automated software distribution
- Logging server for transaction logging and charging
- Reporting manager for report generation
- Alarm manager

Service Creation Environment

- Consistent workflow creation for signaling, voice, SMS, USSD, web/chat, VXML
- No-code, browser-based graphical user interface with drag-and-drop
- Integrated script engine with 300+ commands
- Integration of databases and web services (XML/SOAP parser)

ABBREVIATIONS

| | |
|---------|---|
| ACD | Automated Call Distribution: Used to distribute incoming calls automatically within a group of terminal devices. This function is used to forward calls to members of a specific group of interchangeable recipients. |
| ARPU | Average Revenue per User (or Average Revenue per Unit): Term used in accounting. |
| ASR | Automatic Speech Recognition: Translation of spoken words into text, performed without human intervention. |
| BHCA | Busy-Hour Call Attempts: Term used to indicate the number of telephone calls attempted in a given telephone system at the busiest hour or peak hour of the day. |
| BHCC | Busy-Hour Call Completion: Indicates the number of telephone calls successfully completed in a given telephone system at the busiest hour or peak hour of the day. Used to measure the capacity of the network. |
| BSS | Business Support Systems: Collective term for the business-related components used by a telephone network operator to run the organization. |
| CapEx | Capital Expenditure: Term used to indicate money spent on corporate assets by purchase or other means. |
| CAPS | Call Attempts Per Second: Unit of traffic measurement in telecommunication networks. |
| CDG | CreaLog Dialog Graphics for service creation: This CreaLog development environment is used to create the services present on the SCP, SIP, media, and messaging servers. |
| CRM | Customer Relationship Management: General term for all concepts and systems an organization may use to manage its interactions with current and future customers. |
| CSP | Communication Service Provider: CSPs include telecommunications, internet, satellite, and other businesses. |
| CTI | Computer Telephony Integration: General term for any technology offering concurrent and coordinated interaction on a telephone and a computer. Most CTI systems are desktop workplaces used for serving customers who are calling or being called with the help of a customer database. |
| DTMF | Dual-Tone Multi-Frequency Signaling: Widely used CAS-type telecommunication signaling method involving tones at specific frequencies being sent over analog telephone lines. |
| FMC | Fixed-Mobile Convergence. |
| FWA | Fixed Wireless Access provides internet access to homes using wireless mobile network technology rather than fixed lines. 5G FWA promises to deliver a level of service similar to a fiber-based broadband network. |
| GSM | Global System for Mobile Communications: Cellular network technology standard developed by the European Telecommunications Standards Institute (ETSI). |
| GUI | Graphical User Interface: Type of user interface widely used today enabling user interaction with computers and other electronic devices based on graphical images rather than written text. |
| HSS/HLR | The HSS (Home Subscriber Server) is the combination of the HLR (Home Location Register) and the AuC (Authentication Center). |
| ICT | Information and Communications Technology: Term used to specifically stress the role of unified communications and the integration of computer hardware and software with telecommunication systems, enabling users to access, store, transmit, and manipulate information of any kind. |
| IMS | IP Multimedia Subsystem: Set of specifications for delivering multimedia services on IP networks. IMS is based on the SIP protocol and includes services such as VoIP and presence information. |
| IN | Intelligent Network: Service-based network architecture that forms a layer above the physical (fixed-net and/or mobile) network infrastructure. IN services go beyond standard network services such as telephony and fax and are accessed through specific service numbers. |
| ISUP | ISDN User Part: Forms part of the application layer of SS7 used to set up telephone calls in a PSTN. |
| IVR | Interactive Voice Response: Technology that enables humans to interact with a computer by voice or keypad input. |
| LTE | Long-Term Evolution, also known as 4G: Standard for fast wireless communications for mobile phones and data terminals offering a peak speed of 300 Mbit/s. |

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| MRCP | Media Resource Control Protocol: Communication protocol used in distributed systems, such as the internet, enabling remote control of speech (recognition) resources. |
| MRF | Media Resource Function: Provides media-related functions including media manipulation (e.g., voice stream mixing) and playback. It offers two main functionalities: the Media Resource Function Controller and the Media Resource Function Processor. |
| MSC | Mobile Service Center: Primary service delivery node for UMTS (3G) networks. Can be used for GSM networks if the manufacturer has implemented the relevant support. |
| MVNO | Mobile Virtual Network Operator: A provider of wireless communications services who offers services to subscribers without owning the underlying wireless network infrastructure. A MVNO buys services wholesale from a mobile network operator to offer them to customers at a price at their discretion. |
| NGN | Next-Generation Network: A concept for a packet-switched telecommunication network transporting all kinds of information and services including voice, data, and media of any other kind in packets. |
| NLU | Natural Language Understanding: Technology enabling computers to understand speech as spoken by humans. |
| NTS | Number Translation Services: Translates dialed telephone numbers into “connect numbers” based on the subscriber’s geographic location. The technology changes connect numbers without affecting the corresponding dialed numbers. |
| NSS | Network Switching Subsystem. |
| OpEx | Operating Expenditure: Used in accounting to indicate the ongoing costs spent to run a business or system. |
| OSI | Open Systems Interconnection model: A reference model for network protocols in a layered mode. |
| OSS | Operations Support Systems: Computer systems used by telecommunications service providers to operate and control their networks. These include supporting processes, such as managing network inventory, provisioning services, configuring network components, and re-mediating faults. |
| PLMN | A Public Land Mobile Network (PLMN) is a terrestrial radio network that provides a public mobile service and can be used by vehicles and pedestrians alike. |
| PSAP | Presentation Service Access Point: OSI Application Layer protocols, as well as Asynchronous Transfer Mode (ATM), can use Transport (TSAP), Session (SSAP) or Presentation (PSAP) Service Access Points to specify a destination address for a connection. These work similarly to IP addresses in Data Link Layer protocols. |
| PSTN | Public Switched Telephone Network: Term used for the interconnected, voice-oriented, circuit switched, public telephone networks of the world. PSTNs are almost entirely digital in nature today. |
| PTS | Per-Trunk Signaling. |
| SCE | Service Creation Environment: Development environment used to create the services present on the SCP or SIP, Service Delivery Platform, and media server. |
| SCP | Service Control Point: Standard component of the IN telephone system. SCPs obtain the information they need for their operation from Service Data Points (SDPs) and, using this information, identify the geographical numbers to which calls are to be routed. |
| SDP | Service Delivery Platform: Usually a set of components that provide a service delivery architecture (such as service creation, session control, and protocols) for a specific type of service. |
| SEP | Signaling End Points: Part of the SS7 signaling system. In contrast to other network nodes, SEPs do not pass SS7 messages on to other network elements. They provide functions such as subscriber data management (acting as an HLR or SCP) and SMS-related functions. |
| SIP | Session Initiation Protocol: Signaling protocol for controlling communication sessions, such as voice and video calls, between two or more participants. Used in modern-day communication networks based on the Internet Protocol. |
| SIP-I | Session Initiation Protocol with encapsulated ISUP: A protocol used to create, modify, and terminate communication sessions based on ISUP using SIP and IP networks. |
| SMSC | Short Message Service Center: Network component in mobile telephone networks that serves to store, convert, forward, and deliver SMS messages. |

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| SQL | Structured Query Language: An English-like programming language used for the special purpose of defining data structures and handling data in database management systems. |
| SRF | Specialized Resource Function: A node connecting SSP and SCP alike and delivering special resources in a call. Used to play voice announcements or catch DTMF tones from the user. |
| SS7 | Signaling System No. 7: Set of telephony signaling protocols widely used to set up calls in PSTN. Other uses of SS7 include number translation, SMS transmission, and prepaid billing. |
| SSP | Service Switching Point: The telephone exchange that initially responds when a telephone caller dials a number by sending a query to a central database called a Service Control Point (SCP) so that the call can be handled. |
| STP | Signal Transfer Point: Name for a router that relays SS7 messages between SEPs and other STPs. A STP is generally connected to adjacent SEPs and STPs via signaling links. |
| TCO | Total Cost of Ownership. |
| TDM | Time-Division Multiplexing: Widely used in legacy telephone networks where two or more signals are transferred through a single communication channel concurrently by dividing them into short sections and transmitting these sections in turn. |
| TTS | Text-to-Speech: Term used for any system used to convert coded text into audible speech. |
| USSD | Unstructured Supplementary Service Data: GSM protocol for mobile telephones used to communicate with the service provider's system. USSD communications include prepaid callback service, mobile money services, location-based content services, menu-based information services, and other phone services. |
| VAS | Value-Added Service: Term used by the telecommunications industry for any non-core service. A non-core service is a service beyond an operator's standard voice calls and fax transmissions. |
| VLR | Visitor Location Register: Database serving an MSC and containing the subscribers who have roamed into its realm. VLR entries are unique: A subscriber can only be present in one VLR at a time. |
| VoIP | Voice over IP: Group of technologies, methodologies, and communication protocols used to transmit sound over an Internet Protocol (IP)-based network. VoIP is generally used to unify voice and data networks under the TCP/IP set of protocols and to transmit telephone calls across the internet. |
| VoLTE | Voice over LTE: Standard for high-speed voice communication for mobile phones and data terminals. |
| VXML or VoiceXML | VoiceXML is an extension of the markup language XML used to specify voice dialogues between humans and computers. VoiceXML is interpreted by special voice browsers and allows voice applications to be designed and implemented in a comparable way to XML or HTML for visual applications. |
| XML | Extensible Markup Language: Document markup language that defines a freely extensible set of rules for formatting documents in the widest sense. A specific strength of XML is its readability by machines and humans alike. |

PICTURE CREDITS

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