

A Smooth and Sustainable Migration from Analog to IP



Why is this IP Migration Path Required?

Copper-based public switched telephone network (PSTN) will transition to a digital network based on the Internet protocol (IP) in the coming years, as early as 2019 for some countries.

This IP migration is revolutionizing the telecommunications landscape and all the associated service offerings. When referring to the migration of services, the services that generally first come to mind are fixed-line telephone and Internet services. However, some voice lines support other services and these will also need to be migrated from the copper-based PSTN, in particular, monitored fire alarms and lift communication devices, which are safety critical services.

Change is coming now, are you ready?

End of sale deadline might seem far away yet the migration is becoming critical to deal with. If office moves or new branch office implementations are scheduled as early as 2019, companies will have to do without analog lines!

Multiple applications (see the detailed list in the below table) are unable to migrate to IP without changing all the associated remote terminals & central control systems:

- Alarms (ex: elevators / lifts, cold rooms in retail ...)
- Remote control machines (e.g.: utilities)
- Physical gates access & control (e.g.: retail, ...)

Impacted Applications / Specific Terminals

Used for		Voice	Modem	DTMF (dual-tone multi-frequency)	Powered Terminal
Telemetry / remote reading meters	Gauges, franking machines		✓		✓
Remote maintenance /control	Industrial robots, private switches, doorkeepers, digital locks		✓		✓
Remote monitoring	Alarm centers	✓	✓	✓	✓
Remote alarm / assistance	Lifts, elevators	✓	✓	✓	✓
Machines alarms	Sensors, lifts, cold rooms (retail)		✓	✓	✓
Fax			✓		
Terminals	Payment terminals, badge readers		✓		
Emergency / security calls	Firefighters, police, on-call technician	✓			✓

Source: Livre blanc ACERP 2017 "Transition du RTC vers la voix sur IP"

Another alternative is GSM but it is not always suitable as a PSTN replacement due to:

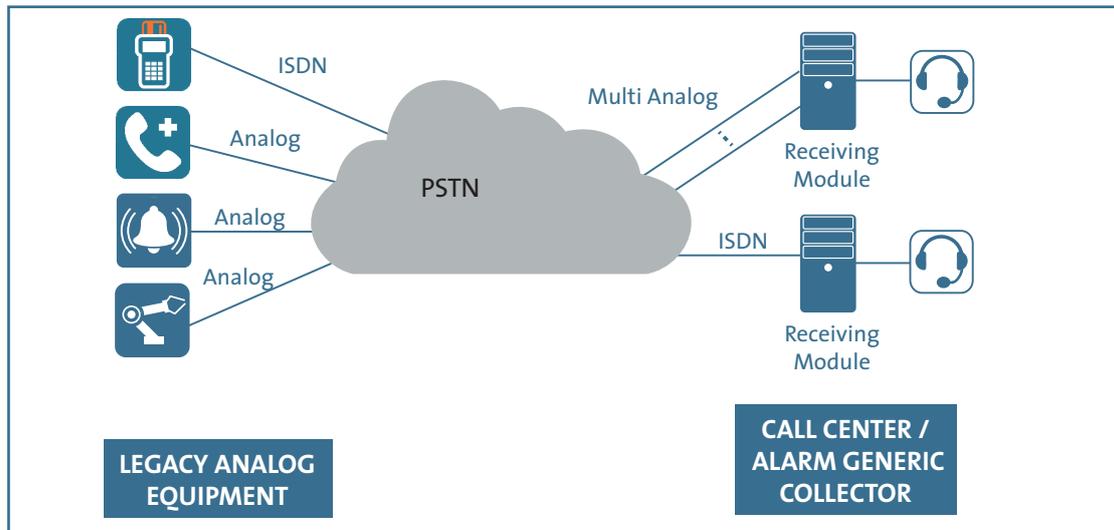
- Its low data rate precludes service evolution (e.g. video)
- Potential issues (GSM network overflow, radio coverage issue, and the uncertain future of 2G and 3G networks)
- Lack of simultaneous data flows

Ekinops (formerly OneAccess) offers a sustainable option for a smooth migration without the need to effect changes in the above listed terminals. We offer particularly competitive solutions for businesses operating within environment with constraints (for instance requiring self-powered or ruggedized equipment).



Today's Solution

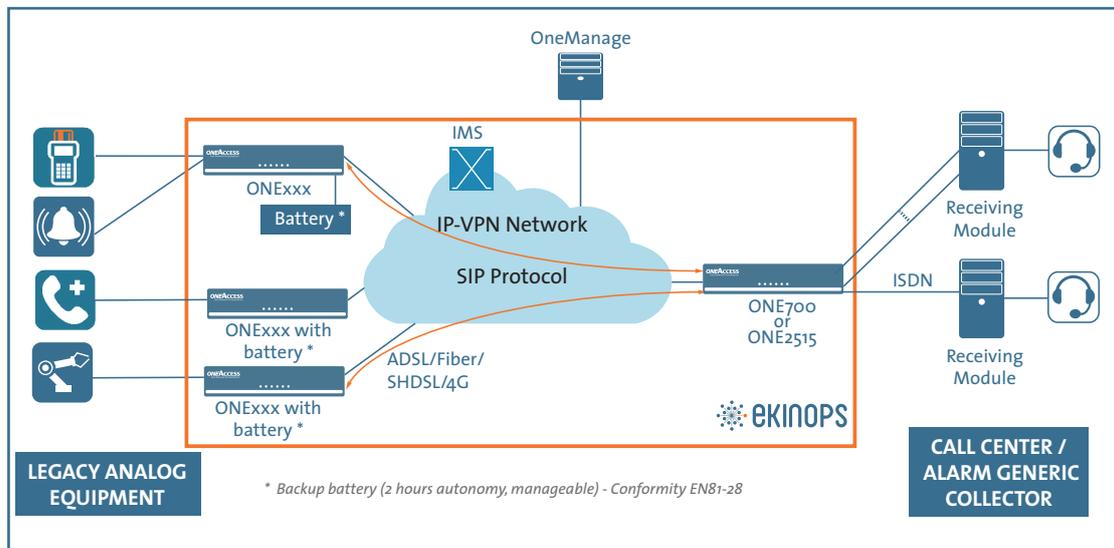
All protocols are transported transparently over a switched communication: ISDN-Basic Rate interface of FXS analogue phone interface.



Legacy Setup

The Ekinops Solution

All protocols are transported transparently over a safe VPN IP network via an integrated voice-data router (in this case ONExxx product) with ISDN interfaces and/or FXS analog phone interfaces and with adequate QoS to support SIP traffic.



With Ekinops Solution

Advantages

- Legacy equipment stay: transparent for the end user
- Cost efficient solution
- Simple deployment and provisioning
- Optimum security (IP-VPN)
- Realtime network monitoring
- High bandwidth enabling video and new services

➔ IP-VPN Technology

The design of the IP transport is based on IP-VPN technology allowing dedicated private communications between sites. This private network using VPN technology (based on MPLS) is not connected to the Internet network so no Internet attacks may occur and disturb alarms or voice communications.

The ONE range is equipped with sophisticated defense mechanisms to control IP security issues such as Denial-of-Service attacks.

Additional mechanisms based on control of the source IP address protects the Call center/Alarm collector from malicious calls.

On site, the ONExxx platforms are only connected to alarm devices as thus do not share traffic with a local IP network.

The Quality of Service features, present on all Ekinops platforms, enable an adequate data rate to be dedicated to the most critical data flows, such as alarms or voice traffic.

ONE425



- Combines ADSL2+ and VDSL2 for 100 Mbps service and a Fibre WAN port for 1000 Mbps service
- Analogue, TDM and IP voice
- 4-port Gigabit Ethernet switch and 802.11g/b/n WiFi
- Up to 4 BRI ports (option)
- Up to 8 PRI ports (option)
- 1x FXO port (option)

ONE545



- Secure Managed Services Data Router for businesses with 50 to 150 desktops
- Ethernet, Fibre, DSL and/or Mobile Network Access
- Industry Leading Price Performance
- Simple Deployment, Provisioning and Management
- Industry standard CLI
- Lowest power consumption: No fan

ONE700



- Integrated voice and data managed services
- For 50 to 300 desk offices
- Ethernet, Fibre, DSL
- ISDN PRI, E1/T1 CAS, 24 FXS, FXO
- Gigabit Ethernet Switching
- Secure SIP signalling and media transcoding

ONE2515



- Industry-standard CLI, SNMP, TR-069 and NETCONF
- 500 Mbps routing performance
- Voice SIP Gateway
- Software options:
 - . ONeSBC
 - . Application monitoring
 - . Application control

OneManage

OneManage is the Ekinops' management suite for the OneAccess portfolio that automates Customer-Premises Equipment (CPE) configuration, software image distribution, monitoring and diagnostics.



Around the world the end of PSTN is near. In Hungary, Austria, the national operators have already transitioned, Switzerland is transitioning now, France stops selling analog lines now and across Europe only the UK gives 2025 as their target date, the furthest away from all-IP network.

Multiple applications are unable to migrate to IP without changing all remote terminals & central and a lot of SMB and companies still have to do something to prevent the impact of the end of PSTN. In France alone one third of the Enterprise market still use tools (from fax to franking machines or other kind of technical terminals) based on analog network*.

Ekinops (formerly OneAccess) enables a smooth and sustainable migration with no change of existing alarm devices. With 5 million lines already migrated over IP, we deliver field proven solutions with products certified by several European operators: Orange, SFR, Bouygues Telecom, Telefonica, Telecom Italia, Vodafone, Proximus, ...

A comprehensive solution with a wide range of modem technologies supported and several uplink possibilities : xDSL, Fiber, UTP Ethernet and 4G it also opens the way for further evolutions.

* Source CDRT, Club des Dirigeants Réseaux et Télécoms 2015

ABOUT EKinOPS

Ekinops is a leading provider of open and fully interoperable Layer 1, 2 and 3 solutions to service providers around the world. Our programmable and highly scalable solutions enable the fast, flexible and cost-effective deployment of new services for both high-speed, high-capacity optical transport as well as virtualization-enabled managed enterprise services.

Our product portfolio consists of two highly complementary product sets.

- One, marketed under the Ekinops 360 brand name, provides a single, fully integrated platform for metro, regional, and long-haul applications.
- The other, marketed under the OneAccess brand name, provides a wide choice of physical and virtualized deployment options for Layer 2 and Layer 3 network functions.

As service providers embrace SDN and NFV deployment models, Ekinops' solutions enable them to deploy today in the knowledge that they can seamlessly migrate to an open virtualized delivery model at a time of their choosing.

A global organization, with operations in 4 continents; Ekinops (Ekl) - a public company traded on the Euronext Paris exchange - is headquartered in Lannion, France, and Ekinops Corp., a wholly-owned subsidiary, is incorporated in the USA.



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