

# Silentel®

enhancing First Responders  
communication possibilities  
in crises management activities

Functional and Technical Description



## OVERVIEW

The effectiveness of crisis management mostly depends on mutual communication of all services. Silentel offers secure encrypted voice, multimedia, instant messages and control data transmission in defined closed user groups. The solution is derived from the Silentel communication platform developed and owned by Ardaco company. It is a new, modern, flexible and open platform for secure communication purposes.

## SILENTEL BASIC CHARACTERISTICS

Silentel is modern IP-based modular communication system based on Client-Server architecture.

The Server modules are responsible for users' authorisation and their resilient and seamless secure mobile interconnection. Hierarchical PKI based identity and authenticity verification is implemented.

The Client modules are available for assorted devices such as mobile phones and laptops and variety of mobile and fixed networks.

Users easily select one of available mobile internet option on his device (GPRS or UMTS mobile internet) or WiFi connection alternatively. In case he uses PC, he can choose fixed internet line connection.

## SILENTEL MAIN FEATURES

### Security

Silentel offers trustworthy cryptographic methods for voice and data encryption:

- Diffie-Hellman key exchange algorithm with X.509 certificates for proving of identity and mechanism against man-in-the-middle attack
- Hierarchical PKI based identity and authenticity verification
  - Login verification based on X.509 certificates and CRL, RSA algorithm with 2048 bits
  - Possibility to account disable by revoking user certificate
- Client side end-to-end encryption
  - AES algorithm with 256 bit keys for communication encryption

## SILENTEL RADIO GATEWAY

Silentel can be even integrated with public or military radios through "Silentel Radio Interface" module. This is the gateway allowing the users from existing public or military radio networks to make a conversation with Silentel users and vice versa.

## RICH USER PRESENCE STATUS

User presence status helps users make the right communication choices by providing detailed information about a person's availability and status. Presence status can be controlled directly by the user or set automatically based on login status. Users can individualize access levels for different contacts to share information with them. Presence is available throughout the assorted device types, users are always informed whether their partners are connected via PC or mobile device. This allows choosing the right communication mode in the respective time.



## POWERFUL SECURE COMMUNICATION MODES

Three main communication modes are available for the users and they can freely select the preferred communication mode for the secure communication, taking into account the fact respective mode should be predefined on the Server by the System Administrator.



### 1. SECURE CALL MODE

Secure Call mode is dedicated for encrypted full duplex voice communication between two users. User selects the partner to dial from his special secure contact list. The Client application shows the list of missed calls in case the call is not accepted in time.

The communication channel between the Clients is encrypted from the first moment of the Call acceptance (DH 2048 key exchange mechanism, unique AES 256 key).

This mode is very similar to the standard mobile phone call, so the users don't have any problems with adaptation to it. Real-time encryption bring minimal delay to the communication. The voice quality is very high due to the optimized AMR voice codec.



### 2. SECURE GROUP CONVERSATION MODE

Secure Conversation mode allows three parallel way of encrypted communication between the individuals or teams:

- DPush-To-Talk based voice communication
- DInstant messaging
- DImage Messaging

It is dedicated both for one-to-one communication between two users as well as for the managed conferencing between the teams (one-to-many).

The conversation channel between the Clients is encrypted the same way as described in Call mode (DH 2048, unique AES 256 key).



### 3. SECURE TEXT MESSAGING MODE

User can send the Secure Text Message to anybody from his secure contact list, regardless the counterpart User Presence Status. He can address the Text Messages to one or more users, which are even not connected to the server in particular time. Undelivered messages will be stored in secure way on the server side and delivered to the addressed people as soon as they connects to the server. The Secure Text Messages are delivered immediately, when the users are connected to the server in the same time.

The encryption is based on the Software Token and User Certificate (RSA2048 based), which is generated on the devices side, private keys are stored on the user device side only, neither the server nor any other user have the access to this secret data.

## SILENTEL ADVANTAGES

- Extremely Economical Solution costing a fraction of the price of a dedicated specialized one purpose system.
- Extremely flexible, immediately deployable, easily upgradable and easy to manage. The customers can run and modify the system.
- Easy configuration of the communication groups and channels. Ad-hoc group can be created in less than minute.
- Silentel can be integrated into any radio legacy system, such as Public, Private or Military radios through "Silentel Radio Gateway Module".
- Solution suitable and comfortable for Forward Mobile Command Post, but even for the private or public office personals.
- Worldwide availability as the system is designed on IP standard protocol running on existing broadly available GSM, WiFi, WiMax, Satellite systems.
- On-site deployable by using affordable Wi-Fi APs, repeaters and satellite internet connection, which is suitable for Forward Mobile Command Post.

Ardaco, a.s. is an innovative leader in the area of Information/Communication Technology and Information security. Ardaco provides, its own developed, fully scalable Silentel® platforms for secure mobile communication including voice, data communication and messaging. In addition Ardaco provides full range of its own developed products in the area of electronic signature, including Qualified Electronic Signature QSign (certified by National Security Agency), QSign archive, QSign e-invoice, QSign e-registry, all for secure and cost effective handling of electronic documents. Individuals, organizations and companies can reliably protect and secure their communication and information with full range of Silentel® and Q-Sign products.

The company was founded in 1996 by a group of technical experts and in the coming years pioneered several new technologies, including patented Electronic Paper Protection Technology (PDMark®), Qualified Electronic Signature Solutions (QSign™) and secure voice communication system for mobile smartphones Silentel® CSD (known also as SecureCall™). In 2008, as one of the first companies worldwide, Ardaco created a new IP based product package for secure voice/data communication and messaging called Silentel® IP (known also as TeamTalk™). In 2010 Ardaco pioneered a new secure messaging system for mobile communication and world most innovative and economical mobile communication solutions for military, police, crises management organisations, integrating Team Talk with typical military or police existing infrastructures such as radios, satellite communication and private communication systems.

Ardaco had its customers and partners in over 20 countries worldwide, including Europe, Middle East, Africa, Asia, North America and South America.



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Enjoy  
the world  
of secure  
communication