



PROTELION

# Encrypted Communication

# “Protelion’s Encrypted Communication Solution is the answer to your security issues”

**Do you know your vulnerabilities?  
Or does your enemy know about them?**

Secure mobile communication has become central to our lives. Voice and information are exchanged on an enormous scale. No type of communication is more vulnerable to interception than mobile communication. Worldwide, immense sums of money and effort are invested in order to get hold of the transmitted communication, data or information. Espionage and counterespionage by governments and private organizations outdo each other and the current enormous volume of industrial espionage has probably not yet reached its peak. Highly efficient trojans and spyware are wreaking mischief on supposedly well-secured mobile communication devices such as smartphones and laptops. Out of convenience, we allow ourselves the luxury of taking no or very little countermeasures, only to bitterly regret this carelessness later.

Today’s world demands fast, secure and reliable communication solutions. Encrypted communication always involves additional effort. However, this additional burden must be low or even automated so that it hardly disturbs the user in his daily work. Moreover, such a security application should provide the service to the user without the user having to worry about the underlying application. From children to government leaders, anyone can use this application.

With this in mind, Protelion GmbH Berlin has developed its own **Communication Security System (CSS)**, that allows users to keep their conversations and information confidential and with integrity at all times.



## CSS Applications for State Authorities and Affiliated Enterprises

This solution provides high eavesdropping resilience and state of the art encryption, that allows presidents, ministers and executives as well as security forces to make calls and exchange data anywhere easily and securely. This solution uses in particular specially hardened and malware proof mobile phones. These are hardened, pre-installed and delivered to the customer by Protelion GmbH. The administration and network infrastructure will be operated and maintained by the customers, mainly government organizations, directly in their country.

## CSS Applications for the Commercial Market

The Protelion CSS Applications allow to comply with the new **European General Data Protection Regulation (GDPR)**. The Protelion CSS solution is offered as a highly secure replacement for WhatsApp, Viber, Signal, etc.

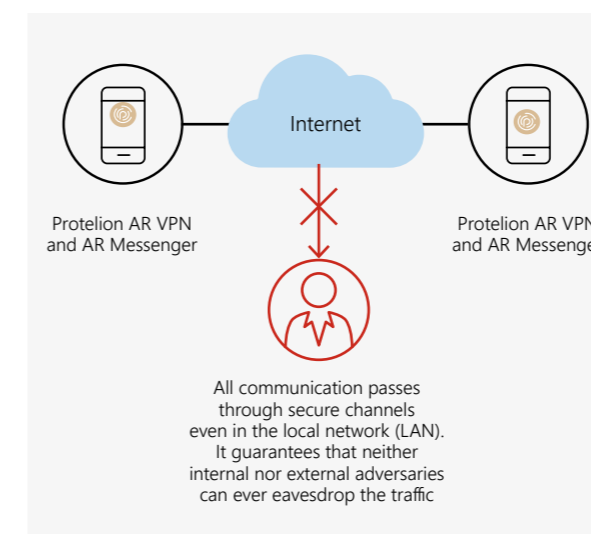
WhatsApp and other messenger services are far from complying with the GDPR and may no longer be used in companies that maintain customer data or customer relationships.

## Advantages of the Protelion Security Technology

### Symmetric Cryptography

The Protelion Security Technology is based on a symmetric AES 256 encryption and offers beyond that various additional advantages.



The technology features the ability to create true point to point VPN connections and provides therefore the capability to transmit IP packets from one end point to another directly without intermediary servers.



### Protelion AR Messenger Service

Protelion's Security Technology provides the necessary applications to establish secure Messenger, Voice, Video, Chat Services which can be used in all types of IP networks.

To achieve these secure services, the following two applications need to be installed:

-  **Protelion AR VPN Client** – Protects user devices against intruders
-  **Protelion AR Messenger** – Unified communication tool

### VPN without sessions

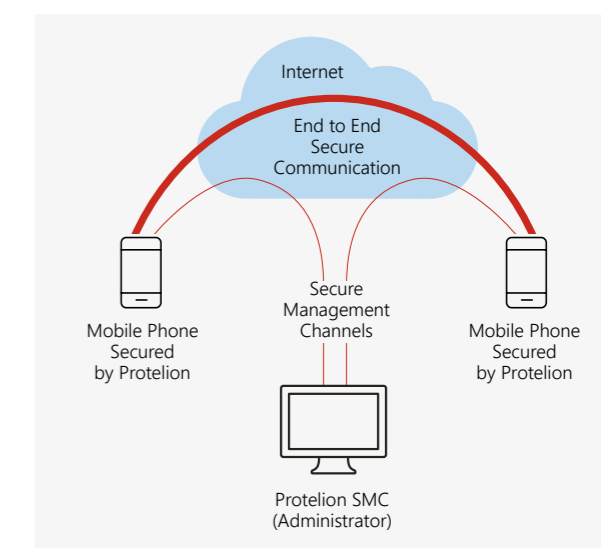
The Protelion AR VPN is a non-sessional VPN. This feature allows the VPN services to work with acceptable performance even through bad quality channels since there is no need for handshakes with servers to transmit data. The first IP packet already contains payload.



Customers can also change or move between channels/antennas and mobile providers without interruptions.

### Protelion Security Management Center (SMC)

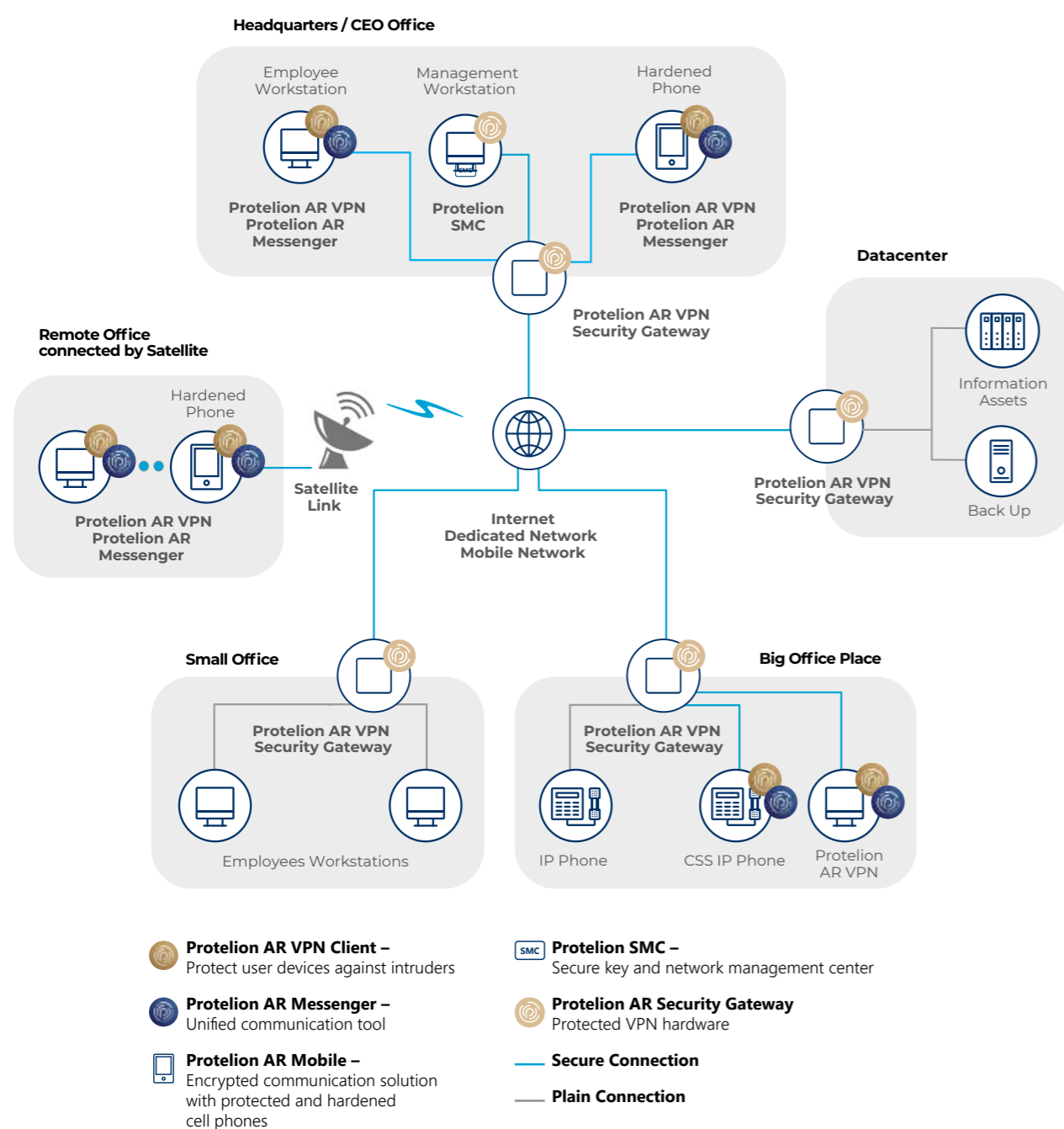
The Protelion Security Technology offers a centralized management platform to manage and update all security and network parameters.



# Protelion Communication Security System (CSS)

The **Protelion AR VPN Technology** protect user devices against internal and external attacks and provide secure access to corporate resources over the Internet and LAN networks by deploying a virtual private network (VPN). They support all modern IP services and any kind of physical communication channels (optical fibers, microwave or satellite links).

## Protelion Communication Security System Scenario



## Protelion AR Messenger

The Protelion AR Messenger is an alternative to unsafe public messenger applications and allows users to communicate securely and easily due to its implemented Protelion Security Technology. Customers can install the secured and directly delivered **Protelion AR Messenger** and **Protelion AR VPN Client** Android Package Files (APK) on any of their devices running under Android, Windows and Linux.

### Protelion AR Messenger on CSS IP Phones



The Protelion CSS IP Phone is compatible with various enterprise SIP servers and ensures communication confidentiality due to preimplemented Protelion AR VPN and AR Messenger Applications.

### Protelion AR Messenger on Notebooks and Desktops



The Protelion AR Messenger Application converts laptops or desktop computers in a fully integrated and protected part of the client's secured communication system.



### Protelion AR Messenger on Mobile Phones

The Protelion AR Messenger allows employees to securely communicate by voice calls, video calls, chat-messages and supports file exchange.

The Application can be installed manually on any private Android phone.

## Protelion Hardened AR Mobile Phone

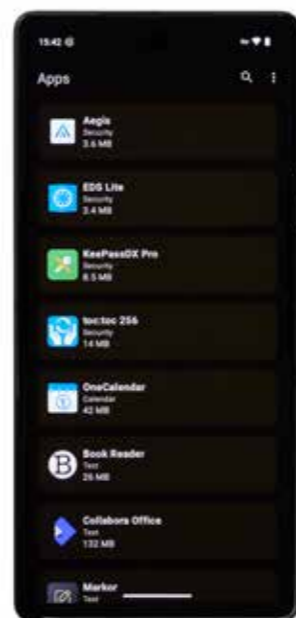
The Protelion AR Mobile Security Solution is the answer to government's need for secure and reliable mobile communication. The solution provides highly protected communication capabilities with secure and verified content.



**Protelion AR Mobile**  
Main screen of Protelion AR Mobile Phone



**Protelion Standard Applications**  
Lists of available Applications for users



**Protelion proprietary AppStore**  
The AppStore offers verified applications to download by the users

The Protelion Hardened AR Mobile Phone consists of three main components:

**Protelion AR VPN Client**

**Protelion AR Messenger**

**Protelion Hardened Mobile Phone**  
Off-the-shelf Android mobile phone hardened by implementing Protelion's own developed Android-based ProtelionOS, which is a highly secure and fully customized mobile phone OS.

It has been developed to provide the highest level of privacy and security while using smartphones for communications. The smartphones, which are hardened in the Protelion Production and Development Center in Berlin are taken directly from the shelf. Most important ability of the ProtelionOS is the provided secure remote- and physical access, which protects from cyberattacks and specialized spywares that use zero-day exploits to intrude and infect operation systems.

### SERVICES BLOCKED ON THE PROTELION AR MOBILE

- Protelion fixes, in agreement with the customer, a list of restrictions and preinstalled applications
- It restricts access to the Google Play Market App-Store
- It blocks the installation of not verified and signed applications on the device
- It offers a Kernel Level Firewall
- It prohibits the possibility of flashing the device or accessing the operation system bootloader
- It provides bootloader locking, which prevents installation of modified recovery partition and reflashing
- It denies any connection bypassing VPN
- It denies the ability to reset the device to factory settings
- It prohibits any uncontrolled updating of the operation system version
- It blocks GSM services. All communication is conducted only through protected IP VPN channels

## Protelion SMC

The Protelion SMC is an all-in-one management platform that serves to manage and control different Protelion products and solutions.

It supports web graphic user interfaces and allows to:

- Facilitate Protelion security products deployment, management, key generation/delivery and license management
- Distribute/Manage licenses for Protelion products to organizations



- Divide Protelion AR Messenger users into groups depending on their profile by establish specific links between them
- Manage Protelion networks for each organization, user accounts, devices etc.
- Manage the AR Messenger Address Book in the Protelion SMC platform. Any alteration can only be done, internally or remotely, by the organization's assigned security administrator

### Protelion SMC – On-premise or Cloud based

Protelion SMC can be deployed On-Premise, Remote in a secure environment (Bunker) or in a Cloud. The latter options can be used for customer organizations that don't want to install any management components on their premises. In any case, customers will always be able to operate their management centers through highly secured remote access channels.

### CSS KEY BENEFITS

- Protelion Communication Security System provides a highly secure protected communication system for everyday use by means of a military standard AES encryption
- Protelion Communication Security System users exchange encrypted traffic directly between devices (point-to-point)
- Protelion Communication Security System is made for voice- and video calls, group chat and file exchange
- Protelion Communication Security System is easy to use through a modern and intuitive UI design that requires no special skills from users
- Protelion Communication Security System contact list is created by the Protelion SMC centrally. It is isolated and protected
- Protelion Communication Security System is the ultimate mobile communication protection for government and business use



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