



## Architecture of the IKE test environment

### IKE/IPsec Inspector – modular und flexible

The architecture and implementation of the test suites has a modular structure. Various test suites, tools and simulations can be integrated on the basis of **Qumate by achelos**. Automated tests and detailed test reports are used to measure product quality.

### More than 130 IKE-test cases

IKE/IPsec Inspector contains more than 130 different test cases, which are continuously further enhanced.

### Automated test procedures for professionals

A large number of test and evaluation bodies are already using the Qumate test suites from achelos to perform tests in accordance with the framework of accredited test procedures.

## Potential threats to Cybersecurity

### Systems communicate via public networks

- Internet, Wireless networks
- Data can be intercepted and changed

### Protection of data integrity

- Sensor data, control signals

### Preventing unauthorised third party access

- Trade secrets, personal data

### Identification of the communication partners

- Contracts

### Often all these measures are necessary

- Banking transactions, critical infrastructures

### achelos-Test suites include the following:

- The expert knowledge of our BSI-trained employees
- The continuous development of the Qumate by achelos platform since 2009
- The practical experience of Qumate by achelos in the field of critical infrastructures
- A high degree of automation: fast, flexible and with verifiable results



Verifiable IT security  
with flexible software tools

IKE/IPsec  
Inspector

Qumate  
by achelos

Security  
made  
in  
Germany

Trust Seal  
www.teltrust.de/ismig



## Established network protocols as a secure standard

Established network protocols, such as Standard **Transport Layer Security (TLS)** and **Internet Key Exchange (IKE)/ Internet Protocol Security (IPsec)**, are recognised standards that today form the basis for secure networks. However, implementation and configuration are extremely complex and can present loopholes for hackers if not performed correctly.

The **IKE/IPsec Inspector** from achelos helps you eliminate these loopholes in a targeted way. Our competitive test suites, which are developed in cooperation with an accredited test centre, ensure manufacturer-independent testing of security and conformity of your products and solutions.

The IKE/IPsec Inspector assists you with the development, certification and in the operational field through the flexible selection of test cases.

The Test suites can be operated locally or as Testing as a Service (TaaS).

### IKE/IPsec Inspector from achelos protects

- Network component manufacturers
  - Evaluators and certification bodies
  - System Operators
  - IT departments in companies
  - Government bodies
- against cyber attacks.

## IKE/IPsec Inspector test coverage

The IKE/IPsec Inspector tests the complete structure of the IKE connection up to mutual authentication, behaviour during Rekeying and the reaction to incorrect behaviour such as:

- Missing or wrong parts of communication
- Incorrect key material
- Incorrect certificates
- Unsuitable cipher suites
- Incorrect reaction to manipulations

The IKE/IPsec Inspector from achelos simulates an IKE-Responder and covers test aspects at the IPsec-level. It offers efficient test management- from various simulation environments up to automated test runs. Implementation of the security protocols are investigated in detail and results are logged for future reference.

### The test case catalogue is continuously expanded and is based on the requirements from the following sources:

- Functional specifications
- Technical guidelines (TR)
- Certifications
- Cryptographic standards
- Application notes for Common Criteria certification
- Evaluation standards
- Penetration tests
- Documentation requirements in line with Common Criteria
- IKE/IPsec test suite is based on the following definition:
  - IETF RFC 3602 „The AES-CBC Cipher Algorithm and Its Use with IPsec“

## Benefits of IKE/IPsec Inspector

- Manufacturer-independent test environment
- Compliant with BSI-security guidelines
- Cost saving due to fast certification
- Efficient testing thanks to high degree of automation
- Developed in cooperation with an accredited test centre
- Scope and depth of testing, as well as attack scenarios can be individually selected
- Reproducible and audit-compliant documentation of the test results

**IKE/IPsec**  
Inspector