5G Security

We see already 5G Standalone deployments over the world and operators are forced to implement new security mechanisms to ensure security in 5G that include 5G authentication and Key Agreement and SBI (Service Based Interface) security.

This course starts by highlting end to end architecture and the area that need to be protected, focusing on the security aspects. 5G AKA will be examined in depth covering signalling flows as well as API exchange. And we will finish by analyzing SBI security.

Content of the 2 days Live Training:

1) 5G End to End architecture

1. 5G radio architecture
2. Standalone Vs Non standalone architectures
3. 5G deployment options
4. 4G to 5G migration strategies
5. Areas to be protected in 5G SA

2) Lessons Learnt from 4G security and comparison with 5G

1. Lack of user plane (UP) integrity protection
2. Lack of standardization for network security
3. Adressing weaknesses in LTE Security
4. Poor subscriber privacy protections
5. Vulnerable to network spoofing attacks
6. Why 5G security is important in 5G technology
7. Security in 5G versus 4G

3) Subscriber Identification and Network Access Security in 5G

1. Network Access Security concept
2. Entities Involved in Network Access Security
3. Protecting the Subscriber Identity
4. Identifying Mobile Subscribers

4) 5G AKA:

1. Mutual Authentication.
2. High Level 5G AKA Procedure.
3. Authentication and Key Agreement.
4. Device Authentication.
5. Authentication Confirmation.

5) Key Derivation and Usage:

1. Encryption and Integrity Checking.
2. Key Derivation Process.

6) 5G network domains and 5G security functions

1. Main players in the 5G Security landscape
2. 5G Non SBA Interfaces security
3. 5G SBA interfaces security
4. 5G Signaling and security
5. O-RAN Architecture and security