P1 Security

Priority One Security

2022

Training Description

TS-501 5G Telecom Security hands-on course

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Description of training

With 5G Proofs of Concepts and early deployment, Market adoption and direction in terms of usage are set or appearing, and operators are preparing massive deployment.

This 5G Training Session (TS-501) will help security and telecom professionals get an understanding of the key concepts of 5G, their security, the implementation of such architectures and the impact in terms of related risks.

Duration
Unique version: 3 days.

Attendees will receive

- Training material: copy of the presenter's slides through Intralinks Web platform tool for a one-year duration after the training's delivery.

Prerequisites for training

- Good knowledge of 4G architectures (LTE & EPC)
- Basic knowledge of telecom & network principles:
    - What is 2G, 3G;
    - OSI network layers;
    - Basic knowledge of telecom technologies.
- Good knowledge and usage of Wireshark;
- Internet Access.

Covered in this training

- Introduction
- 5G different architectures and impact on security
- Components of 5G deployments and danger areas
- 5G Domain Security Overview
- 5G RAN and virtualized RAN
- 5G Phase 1 : Non-Standalone (NSA) Security
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- 5G UE, Handsets and SoCs
- 5G NR Radio access and security principles applied to 5G subscribers
    - Anonymization of subscriber's fixed identity
    - Authentication and Key Agreement (AKA)
    - Encryption and integrity protection of control-plane and user-plane traffic
    - Activation of the security and related signalling procedures
- Impact of new 5G protocols in term of security:
    - X2 extensions for NSA deployment

    - F1AP
    - E1AP
    - PFCP
- 5G Core, Service Based Architecture (SBA), Roaming and Interconnect Security
- Infrastructure level deployment, security & risk of NFV (Network Functions Virtualization)
- Benefit and risk of 5G slicing in term of Security
- Understand the risks and attacks on isolation in a 5G multi-tenant environment (Slicing, NFV, SDN)
- Testbeds and network stacks security
- Hands-on exercises
- Closing Remarks and Debrief