GPRS Architecture, Operations and Troubleshooting Training Course

23 – 27 May 2027
Langkawi

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Ref: 1677_226126 **Date:** 23 – 27 May 2027 **Location:** Langkawi **Fees:** 6000 Euro

Overview

GPRS Architecture, Operations and Troubleshooting Training Course is a one-week professional course for mobile network engineers and operations teams, who leave with a GPRS Service Path and Fault-Isolation Playbook. The course links packet-radio resources, SGSN and GGSN functions, interfaces, mobility, PDP sessions, charging evidence and performance indicators. Participants analyse procedures and traces without treating GPRS as modern mobile broadband. Agile Leaders Training Center develops practical legacy packet-service capability.

Who Should Attend

- Mobile network engineers supporting GSM and GPRS services
- Radio engineers responsible for packet channels and resource behaviour
- Packet-core specialists working with SGSN, GGSN and GTP paths
- Network operations staff monitoring GPRS service performance
- Technical support teams investigating attach, session and data faults

The course assumes familiarity with cellular-network terminology and IP packet concepts. It excludes detailed LTE or 5G architecture, vendor certification and non-technical mobile-service introductions.

Departments and Industries

The course supports organisations that retain, interwork with or migrate legacy GPRS services.

- Mobile network operators and managed-service providers
- Telecommunications network operations centres
- Machine-to-machine and legacy telemetry service teams
- Transport, utilities and industrial communications
- Telecom engineering and technical support organisations

Learning Objectives

By the end of this course, participants will be able to:

- Map GPRS radio, core-network and external data paths
- Explain packet channels, resource allocation and PCU functions
- Analyse attach, routing-area update and mobility procedures
- Trace PDP context activation, APN selection and GTP tunnelling
- Relate charging records and KPIs to service behaviour

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- Apply a structured trace-based troubleshooting and migration method

Course Agenda

Day 1: GPRS Architecture and Service Path

- GSM Evolution to the Packet-Switched Domain
- Mobile Station, BSS, PCU, SGSN and GGSN Function Map
- Gb, Gn, Gi and Supporting Interface Matrix
- Control Plane and User Plane Path Diagram
- GPRS Service Dependency and Boundary Register

Day 2: Packet Radio Resources and Access

- Packet Data Channel and Timeslot Structure
- Temporary Block Flow and Radio Resource Sequence
- Uplink and Downlink Resource Allocation Cases
- Coding Scheme, Radio Quality and Throughput Relationship
- Radio Access KPI and Congestion Evidence

Day 3: Core Network, Mobility and Sessions

- GPRS Attach and Authentication Message Flow
- Routing Area, Mobility State and Update Procedure
- PDP Context, APN and Address Allocation
- GTP Tunnel Establishment and Packet Path
- Detach, Context Modification and Failure Cases

Day 4: Operations, Charging and Troubleshooting

- Subscriber Data and Service Authorisation Checks
- Quality of Service Profile and Session Evidence
- SGSN and GGSN Charging Record Flow
- Protocol Trace Correlation Across Radio and Core Domains
- Attach, PDP, DNS and User-Plane Fault Decision Tree

Day 5: Performance and Migration Practice

- Exercise: Map a Complete GPRS Service Path
- Exercise: Diagnose Radio Resource and Congestion Symptoms
- Exercise: Analyse Attach and PDP Context Failures
- Exercise: Reconcile KPIs, Alarms and Protocol Traces
- Capstone: GPRS Service Path and Fault-Isolation Playbook

Practical Exercises

Suggested activities use anonymised packet-service flows, counters, alarms and protocol traces.

- Suggested activity: assign interfaces and responsibilities to each GPRS node
- Suggested activity: sequence mobility and PDP session messages
- Suggested activity: distinguish radio, subscriber, core and external-data faults
- Suggested activity: build a coexistence, continuity or migration decision register

FAQs

Who should take GPRS technical training?

GPRS technical training suits radio, packet-core, operations and support professionals who maintain legacy packet-data services or need to interpret their procedures during coexistence and migration.

What roles do the SGSN and GGSN perform?

The SGSN manages packet-service mobility and access for attached users, while the GGSN connects GPRS packet sessions to external data networks and anchors the related tunnel path.

What is a PDP context in GPRS operations?

A PDP context holds session information needed for packet-data service, including access-point, address, quality and tunnel-related parameters used to establish and maintain the data path.

Does the course cover LTE and 5G troubleshooting?

No. It concentrates on GPRS architecture, radio access, packet-core procedures and legacy-service evidence. LTE and 5G are mentioned only where coexistence or migration context requires comparison.

Conclusion

Participants take back a GPRS Service Path and Fault-Isolation Playbook containing architecture maps, interface responsibilities, radio-resource evidence, procedure flows, KPI relationships and trace-based decision trees. It helps teams sustain required legacy services while making continuity, coexistence and migration decisions explicit.