



Mobile@Home Training Programs

Package Description



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1 Introduction

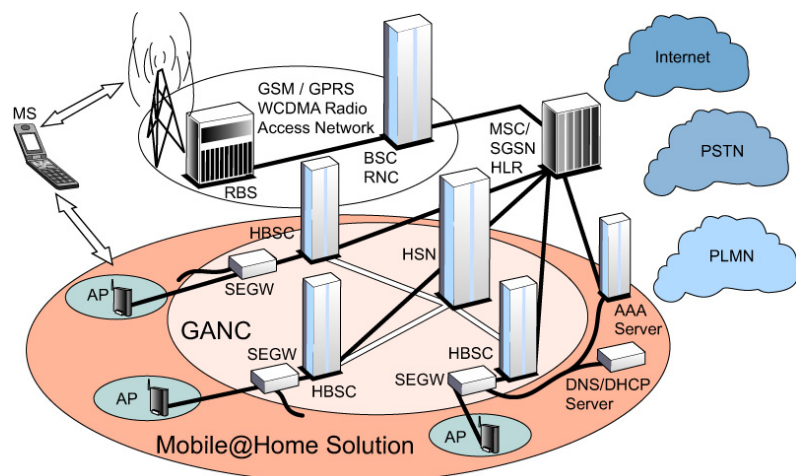
Ericsson has developed a comprehensive Training Programs service to satisfy the competence needs of our customers, from exploring new business opportunities to expertise required for operating a network.

The Training Programs service is delineated into packages that have been developed to offer clearly defined, yet flexible training to target system and technology areas. Each package is divided into flows, to target specific functional areas within your organization for optimal benefits.

1.1 The Mobile@Home Solution

The Mobile@Home solution is an access network for mobile core network that has the same role in the mobile network as GSM/EDGE and WCDMA radio access networks (GERAN/UTRAN) but makes use on unlicensed spectrum and IP-based broadband access networks. It is based on the generic access network (GAN) specification (formerly known as unlicensed mobile access (UMA)).

With Mobile@Home, end-users can use their GSM terminals at home to access mobile services over wireless LAN (WiFi or Bluetooth). The solution minimizes operator investment by reusing the existing mobile core network and other support nodes.



The Mobile@Home solution



2 Why invest in Mobile@Home Package?

At Ericsson we have worked with hundreds of operators and Service Providers worldwide, and we are in a strong position to help. As a leader in developing industry standards for technology and products, we have structured our training packages around your needs, from basics to more advanced operations. Ericsson can identify your training needs and then select the right training package to provide the competencies required for a successful and profitable future.

Benefit with package

- **Faster time to revenue**

Task oriented, targeted and blended training to ensure staff is operational in less time.

- **Cost efficiency**

Blended learning for both time and cost efficiency. Lower operational costs provided by task oriented training.

- **Increased performance/less churn**

Efficient processes achieved by skilled and competent staff.

- **Minimal risk**

Ericsson's vast industry knowledge and experience is available through appropriate training.

- **Organizational effectiveness**

Clear and continuous training strategies to motivate staff and provide opportunities for long term business success.

3 What's in the Mobile@Home Package?

The Mobile@Home training offers a number of training courses ranging from basic principles to how to run the network, and focusing on target groups within different work areas of an operator's organization. For each work area we present standard training flows that match the currently defined job tasks.



The course flows are focusing on the following job categories.

Field Operations - Field Technician	Operations Centre Front Office - System Technician - Service Technician Back Office - System Engineer - Service Engineer
Fundamentals - Fundamentals	

To ease the use of this document, the courses contained in the course flows have an icon reflecting the type of course or methodology. The interpretation of the icons is given below.

Icon	Delivery Method
	Instructor Led Training (ILT)
	Virtual Classroom Training (VCT)
	Web Based Learning (WBL)



4 Fundamentals

4.1 FAB 102 1465 GSM Network Fundamentals

This training sub-package consists of a set of courses needed for Field Technician, System Technicians and System Engineers going to work with Mobile@Home operation, administration and configuration.

4.1.1 What is achieved by attending the Flow

Participants attending this flow will get a solid theoretical background in GSM and GPRS. The GSM network, the different hardware platforms, the GSM Air Interface and GSM evolution from a voice centric system to mobile data services are discussed on a generic, however sometimes detailed, technical level.

Are you lost when discussing GSM network basic concepts? If you are starting to work in different areas of the GSM system and need a general concept the GSM System Survey course is the course you were looking for. It will provide you with knowledge about Ericsson's GSM based systems and GSM 800/900/1800/1900. It will focus on GSM terminology, wireless concepts, functions of network nodes, and the Ericsson implementation of those network nodes. Completing this training you will have all the initial knowledge you need to proceed in competence development in other areas.

The GPRS System Survey course procures a basic introduction to the GPRS technology, the air interfaces for GSM (including EDGE) and WCDMA. The course includes traffic cases and Ericsson products within this field are presented. The focus is on general principles rather than specific technical details. This course can also be delivered as Virtual Classroom Training.

Participants attending the OSS-RC Overview course will be given a basic introduction to the Operation and Support System - Radio Core (OSS-RC). The OSS-RC is used for centralized Operation, Maintenance and Performance Management of mobile networks. OSS-RC can manage Radio- (GSM) and Core Network (GSM and WCDMA) nodes. The participants of the course will be guided through the different applications of the OSS-RC and explore the functionality and purpose of the various applications.

4.1.2 Rationale for Flow design

The sub-package contains two tracks; one ILT covering GSM and GPRS System Survey and a corresponding Web-based flow.

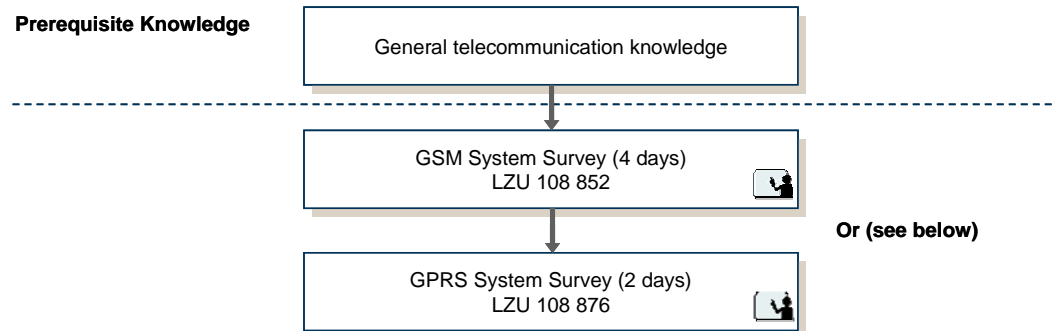
This flow builds the solid foundation to understand the GSM System and the Ericsson solution. Starting with the GSM air

interface, the functionality and roles of the different nodes, the flow is continued with detailed knowledge about the influence of GPRS

4.1.3 Prerequisites

General Telecommunication knowledge.

4.1.4 Training Flow



4.2 GSM Network Fundamentals, WBL, FAB 102 1947 R1A

The GSM Network Fundamentals, WBL, FAB 102 1947 R1A consists of six courses in order to allow the participants to take the appropriate steps in learning, fitting their competence needs. Besides the GSM Radio Network Overview, all other courses can be taken in any order, with priority on the competence area where the participants see the biggest need. By having all the courses web based, a very flexible setup is provided to the learner to define their own pace of learning and control their learning progress. Learning can take place conveniently at the work place. This flow is an alternative to attending classroom training in the flow

4.2.1 What is achieved by attending the Flow

Participants attending this flow will get a solid theoretical background in GSM and GPRS. The GSM network, the different hardware platforms, the GSM Air Interface and GSM evolution from a voice centric system to mobile data services are discussed on a generic, however sometimes detailed, technical level.

The GSM/WCDMA Core Network Overview course provides students with an overview of the GSM/WCDMA Core Network, with all its components, functions and characteristics.

Participants attending the OSS-RC Introduction WBL course will be given a basic introduction to the Operation and Support System (OSS). The OSS is used for centralized Operation and



Maintenance of mobile networks. OSS-RC can manage Radio-(GSM) and Core Network (GSM and WCDMA) nodes.

The GSM/WCDMA Traffic Cases course is a web-based course and explains on overview level data and speech traffic cases. It illustrates with signaling diagrams the call setup and mobility management procedures. The web-based course presentation visualizes animated message flows and an information area where the explanatory text is shown. Different levels of details are presented. After the course the improved knowledge of the student can be tested in a question and answer session. The participant will explore each traffic case and follow on the screen the respective signaling flow. In the introduction to each case the concepts and terms are explained and the flow is visualized in detail. The information window and the pop-up windows will provide additional information about the current message and explanation of what happens in the receiving party when the message is received.

Participants attending the GSM Radio Network Overview WBL course will be given a basic introduction to the Radio Access part of GSM.

Participants attending the GPRS Overview WBL course will be given a basic introduction to the 2nd generation Systems based on GSM. The GPRS core and radio network extension to the GSM network and possible GPRS services are explained on an overview level. The role of the GPRS nodes in GSM networks is discussed as well as the influence of the EDGE to the GPRS air interface. The focus is on general principles rather than specific technical details.

The GSM/WCDMA Transport Network Overview WBL course provides a general introduction to the WCDMA Transport Network and explains on overview level the Transport Network components and underlying Transport Network technologies. The features and functionality of the Transport Network elements are explored along with a description of Ericsson Transport Network products.

4.2.2 Rationale for Flow design

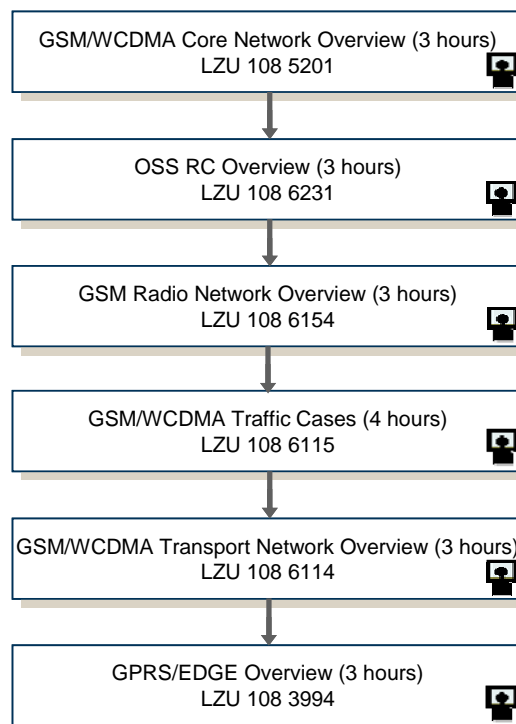
The flow is divided into several courses in order to allow the participants to take the appropriate steps in learning, fitting their competence needs. Besides the GSM Radio Network Overview, all other courses can be taken in any order, with priority on the competence area where the participants see the biggest need. By having all the courses web based, a very flexible setup is provided to the learner to define their own pace of learning and control their learning progress. Learning can take place conveniently at the work place. This flow is an alternative to attending classroom training in the flow GSM Network Fundamentals, Blended Training, FAB 102 1465 R1A.

All WBL courses in this flow are available in a SCORM compliant version and could be interworking with a Learning Management System, also enabling to track the students' progress.

4.2.3 Prerequisites

There are no prerequisites to this course flow. General telecommunication knowledge might be of advantage, though.

4.2.4 Training Flow



4.3 FAB 102 1948 Mobile@Home Fundamentals

This training sub-package consists of one course needed for Field Technician, System Technicians and System Engineers going to work with Mobile@Home operation, administration and configuration.

This training sub-package is also very useful for those who want a detailed description of the Mobile@Home Solution.

4.3.1 What is achieved by attending the Flow

IP Networking will give the students an insight and understanding of the TCP / IP protocol stack from the physical layer to the application layer. The students will learn the operation of different protocols and applications within the TCP / IP suite such as ARP, BOOTP, DHCP, DNS, NIS, NTP, NFS, HTTP, FTP, SMTP, Telnet, FTP, TFTP. Students will learn about IP addresses, both classful and classless (CIDR) and how subnetting / aggregation operates. Students will learn about different network devices and will get a detailed understanding of Bridging, LAN Switching, Routing and Routing protocols. The hands-on exercises and analyzers are used to facilitate the understanding of theory sessions.

On completing Mobile@home Technical Solution Overview course, the participants will be able to describe the Mobile@Home solution, including the network elements comprising the solution, traffic cases, security and QoS issues.

Moreover, the participants will be able to describe the Mobile@Home management principles.

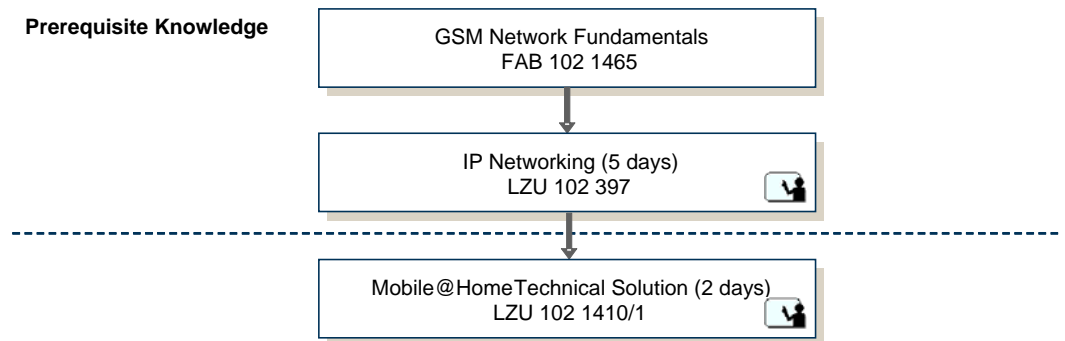
4.3.2 Rationale for Flow design

The sub-package contains one course; the Mobile@Home Technical Solution.

4.3.3 Prerequisites

GSM Network Fundamentals and IP Networking.

4.3.4 Training Flow



4.4 FAB 102 1949 HSS Fundamentals

This training sub-package consists of one course needed for Field Technician, System Technicians and System Engineers going to work with Mobile@Home operation, administration and configuration.

4.4.1 What is achieved by attending the Flow

On completing this course, the participants will be able to describe the main characteristics of the Telecom Server Platform (TSP), hardware and software architecture, the different hardware types (NSP 4.0, NSP 4.1, NSP 5.0), and the external interfaces available.

Moreover, the participants will be able to describe the applications supported by the TSP, including the Home Subscriber Server (HSS) used for authentication, authorization and accounting.

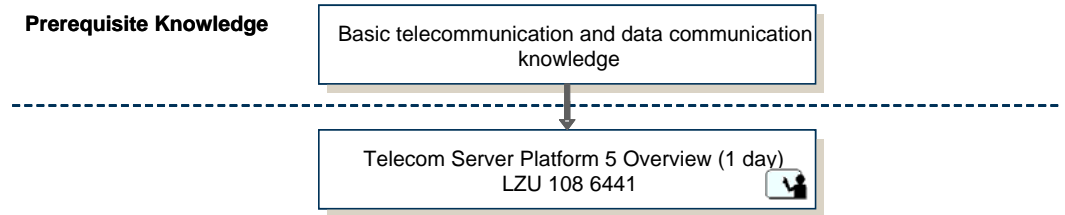
4.4.2 Rationale for Flow design

The sub-package contains one course; the Telecom Server Platform 5 Overview.

4.4.3 Prerequisites

Basic telecommunication and data communication knowledge.

4.4.4 Training Flow



4.5 FAB 102 1434 IPWorks Fundamentals

This training sub-package consists of one course needed for Field Technician, System Technicians and System Engineers going to work with Mobile@Home operation, administration and configuration.

4.5.1 What is achieved by attending the Flow

This GPRS System Survey course procures a basic introduction to the GPRS technology, the air interfaces for GSM (including EDGE) and WCDMA. The course includes traffic cases and Ericsson products within this field are presented. The focus is on general principles rather than specific technical details.

IP Networking will give the students an insight and understanding of the TCP / IP protocol stack from the physical layer to the application layer. The students will learn the operation of different protocols and applications within the TCP / IP suite such as ARP, BOOTP, DHCP, DNS, NIS, NTP, NFS, HTTP, FTP, SMTP, Telnet, FTP, TFTP. Students will learn about IP addresses, both classful and classless (CIDR) and how subnetting / aggregation operates. Students will learn about different network devices and will get a detailed understanding of Bridging, LAN Switching, Routing and Routing protocols. The hands-on exercises and analyzers are used to facilitate the understanding of theory sessions.

Is IP network configuration and administration a new undertaking for your organization or team members? Are you migrating to IPv6 technology? Does IMS feature in your organisations network strategic planning? Have you purchased an IPWorks solution and require training?

With the help of IPWorks overview training and the guidance of the instructors, the attendees can achieve a thorough understanding of the terminology and operation of both DNS and DHCP services. The course is targeted to those with minimal DNS and DHCP experience. The course will also give the participants an understanding of the requirements for DNS and DHCP in the GPRS / WCDMA and CDMA2000 environment and how to plan, dimension and deploy an



IPWorks solution. The course will also focus on how IPWorks provides efficient, manageable and highly available DNS and DHCP services in these network domains.

4.5.2 Rationale for Flow design

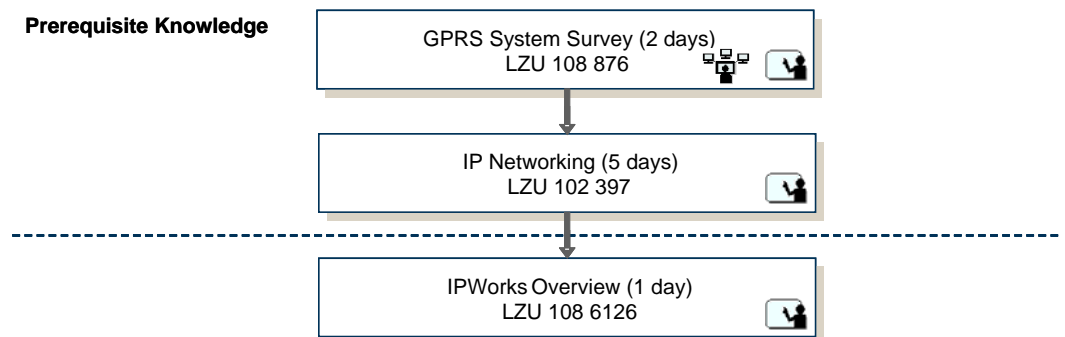
The sub-package contains one course; the IPWorks Overview.

4.5.3 Prerequisites

GRRS System Survey and IP Networking. GRRS System Survey can be delivered as both ILT or as VCT.

4.5.4 Training Flow

Prerequisite Knowledge



5 Operation and Configuration

5.1 FAB 102 1950 HBSC Operation and Maintenance

This training sub-package consists of two courses needed for Field Technician to manage on-site operation or maintenance.

5.1.1 What is achieved by attending the Flow

On completing these courses, the participants will be able to operate, configure and maintain the functions of the AXE 810 including the APG40.

Moreover, these courses will provide the participants with the skills and knowledge required to support the AXE/BSC based HBSC applications.

How can you correctly operate your controller without knowing the correct procedures? In the GSM BSC Operation course you will learn how to operate and configure the GSM BSS. The course covers configuration activities in the BSC/ TRC nodes and the interfaces to the core network nodes MSC and SGSN, the interface to the RBS and maintenance activities in the BSC. Participants will complete practical configuration and



fault-finding exercises using on-line documentation and OSS-RC GSM RAN application or Winfiol.

The GSM BSC Maintenance course enables the participants to perform hardware maintenance on the BSC. The course will provide radio network technicians and radio network engineers with basic abilities to act on hardware faults, do hardware replacement, and follow maintenance routines using the system documentation and local Operation and Maintenance (O&M) tools.

The course is modular, being built up of cases, each case consisting of one or more related events. A sufficient pool of cases and events is provided so that maintenance of all supported GSM BSC hardware configurations may be trained.

Specifically, cases and events may be selected from the learning product to train configurations built up of the following hardware elements:

AXE Central Hardware Elements

- APZ 212 30 and 33
- APG 40

AXE Subordinate Hardware Elements

- 128K GS
- RPs, EMs, RPGs
- BSC-specific elements (TRAU, SRS)

5.1.2 Rationale for Flow design

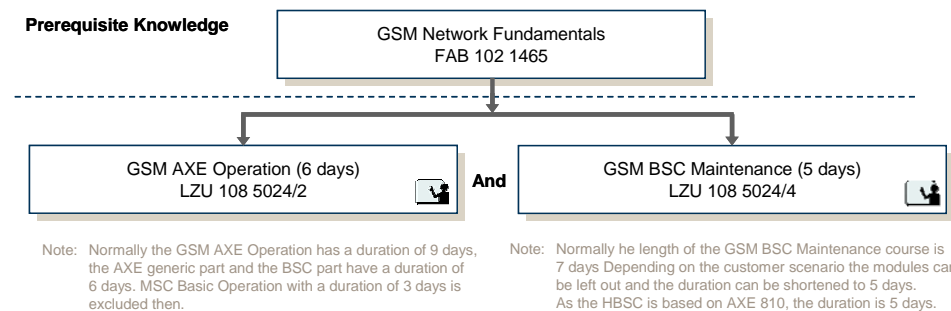
The sub-package contains two courses; the GSM AXE Operation and the GSM BSC Maintenance.

5.1.3 Prerequisites

GSM Network Fundamentals.



5.1.4 Training Flow



5.2 FAB 102 1951 HSS Operation and Maintenance

This training sub-package consists of two courses needed for Field Technician to manage on-site operation or maintenance.

5.2.1 What is achieved by attending the Flow

Unix Fundamentals provides an overview of the fundamentals of the UNIX operating system. The course provides an introduction to the structure and operation of UNIX using the wide range of fundamental commands and utility programs. Tutorials on the 3 shells (Bourne, Korn and C) are given, allowing to the students to experiment with useful shell scripts. Students are encouraged to use the fundamental commands and utility programs throughout the duration of the course.

The complexity of the Core Network and the call control signaling has increased with the introduction of Softswitch Solutions, Bearer Independent Call Control and options for

IP-based transmission. This course is designed to give the participant an overview of signaling technologies and protocols used to manage and control voice calls in the Core Networks for GSM up to release MSS R4.1. The theoretical background will provide a better understanding for the Core Network in general and signaling in specific.

The TSP Node Management course is designed to provide participants with the skills and knowledge to operate and manage the TSP Platform. The course covers all aspects of node management including fault, configuration and performance management activities on the TSP Platform, the operation & maintenance procedures and the node management user interfaces on the TSP Platform. Participants will complete practical configuration and management exercises using on-line documentation and the TSP Node Management (NM) Toolbox GUIs.



The Ericsson Wireless LAN Authentication Server (EWAS) 2.0 Operation course is designed to provide participants with the skills and knowledge to operate and manage the EWAS node. The course covers all aspects of EWAS management including handling faults, configuration and performance management activities on the EWAS node. Participants will also be able to perform operation and maintenance tasks through the different interfaces.

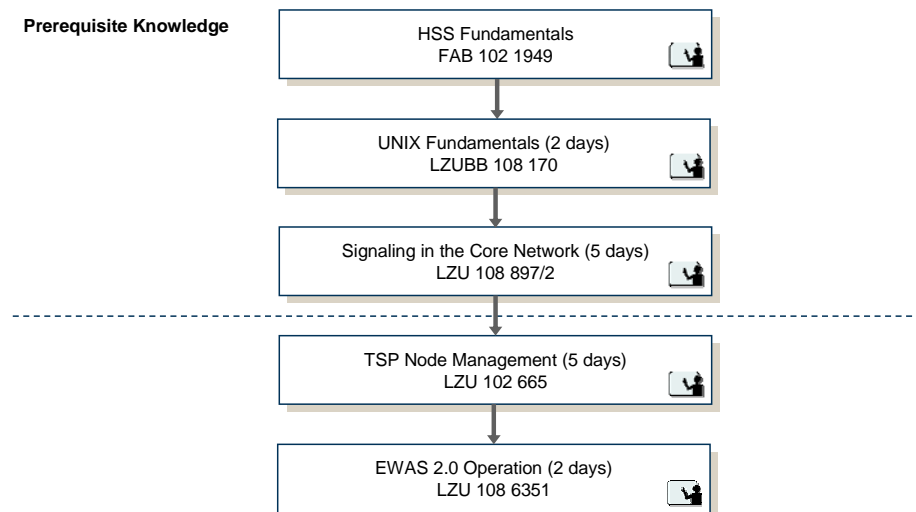
5.2.2 Rationale for Flow design

The sub-package contains two courses; the TSP Node Management and the EWAS 2.0 Operation (currently no dedicated HSS operation course is available).

5.2.3 Prerequisites

EWAS Fundamentals, UNIX Fundamentals, and Signaling in the Core Network.

5.2.4 Training Flow





5.3 FAB 102 1435 IPWorks Operation and Maintenance

This training sub-package consists of one course needed for Field Technician to manage on-site operation or maintenance.

5.3.1 What is achieved by attending the Flow

Unix Fundamentals provides an overview of the fundamentals of the UNIX operating system. The course provides an introduction to the structure and operation of UNIX using the wide range of fundamental commands and utility programs. Tutorials on the 3 shells (Bourne, Korn and C) are given, allowing to the students to experiment with useful shell scripts. Students are encouraged to use the fundamental commands and utility programs throughout the duration of the course.

The Unix System Administration course is a practical course, which will enable the students to perform the basic system administration tasks for a Solaris based Unix platform which include installation, file system management, backup procedures, process control, user administration and device management.

Does maintaining, managing and administering IP operations in your network provide a challenge to you? Are members or your team in need on skills to perform the duties required when managing your IP solution efficiently? Have you upgraded your IP solutions or alternatively are you looking to do so? Do you support the IP Works solution

The IPWorks Operation and Configuration training is designed to familiarize students with the operation and configuration of IPWorks. Students will learn the skills necessary to deploy, configure, and manage DNS and DHCP service using IPWorks. An emphasis is made on developing an understanding of IPWorks as management tool so students can develop their own procedures for supporting and using IPWorks.

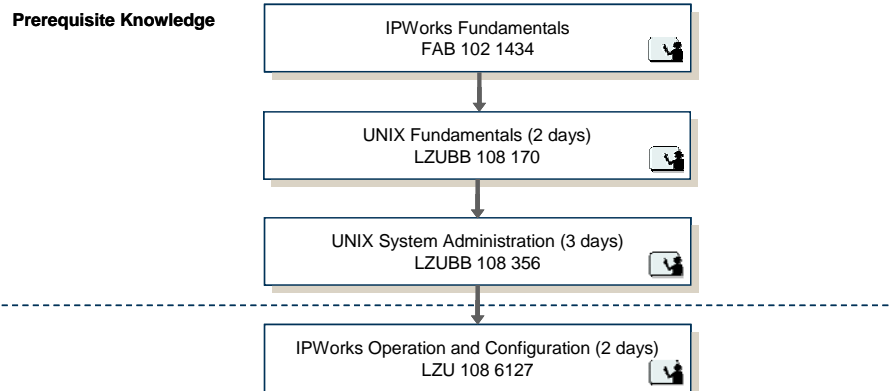
5.3.2 Rationale for Flow design

The sub-package contains one course; the IPWorks Operation and Configuration.

5.3.3 Prerequisites

IPWorks Fundamentals, UNIX Fundamentals, and UNIX System Administration.

5.3.4 Training Flow



5.4 FAB 102 1952 SEGW Operation and Maintenance

This training sub-package consists of one course needed for Field Technician to manage on-site operation or maintenance.

5.4.1 What is achieved by attending the Flow

On completing this course, the participants will be able to install and configure the Clavister Security Gateway and to perform backup and restore.

Moreover, this course will provide the participants with the skills and knowledge to manage the gateway using the Fire Wall Manager.

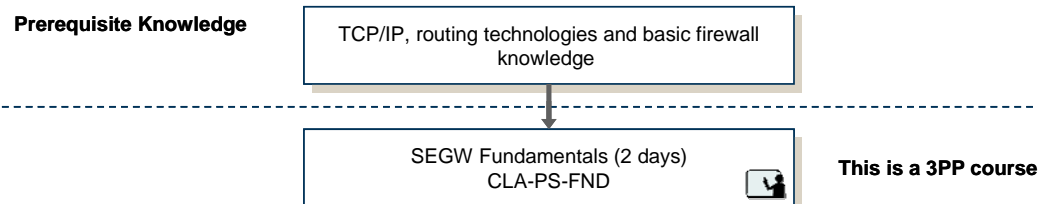
5.4.2 Rationale for Flow design

The sub-package contains one course; the SEGW Fundamentals. This course is a 3PP course offered by Clavister www.clavister.com.

5.4.3 Prerequisites

TCP/IP, routing technologies and basic firewall knowledge.

5.4.4 Training Flow



5.5 **FAB 102 1953 Mobile@Home Operation and Configuration**

This training sub-package consists of one course needed for Field Technician, System Technician and System Engineers to manage on-site operation and configuration.

A selection of topics and application in this course can be made to match the customer network configuration.

5.5.1 **What is achieved by attending the Flow**

On completing this course, the participants will be able to perform basic operation of the GANC components (the HBSC, the HSN and the SEGW) in a Mobile@Home network.

The Mobile@home Basic Configuration course is designed to provide the participants with the skills and knowledge needed to perform basic operation of a Mobile@Home network solution. This is achieved by practicing exercises on the GANC components of the Mobile@Home solution, the HBSC, the HSN and the SEGW. The exercises focus on analyzing traffic cases, handling of logs and statistical meters, alarm handling and fundamental configuration.

5.5.2 **Rationale for Flow design**

The sub-package contains one course; the Mobile@Home Basic Operation.

The duration of this course depends on the actual customer configuration.

5.5.3 **Prerequisites**

Mobile@Home Fundamentals, HBSC Operation and Maintenance, and SEGW Operation.



5.5.4 Training Flow

Prerequisite Knowledge

