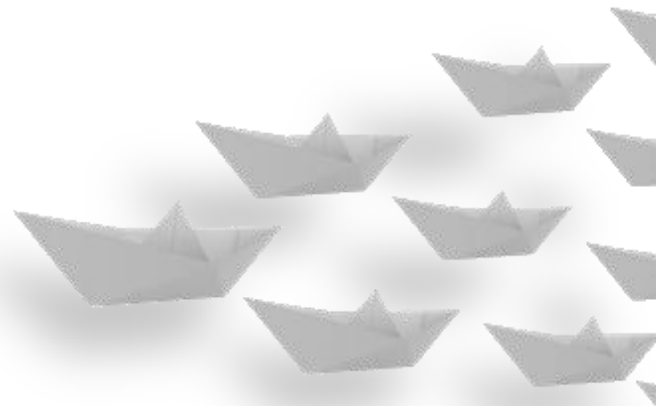
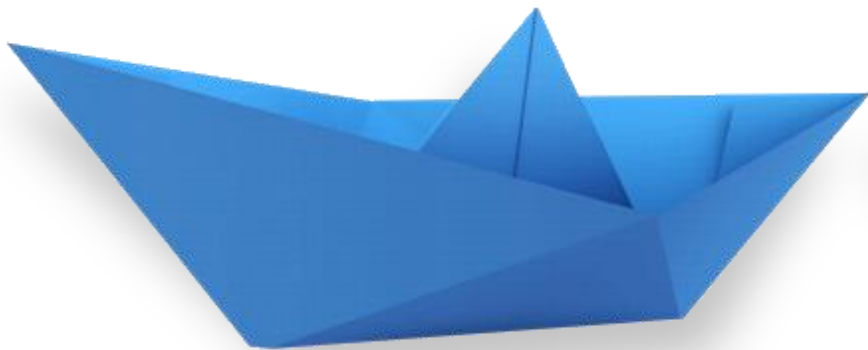


# RAISE Your Game

With specialised small cell training courses from ip.access.

2G System Starter  
Package



### Course Outline

The ip.access 2G System Starter Package is designed to enable the operator to manage and maintain a pre-installed nanoGSM system.

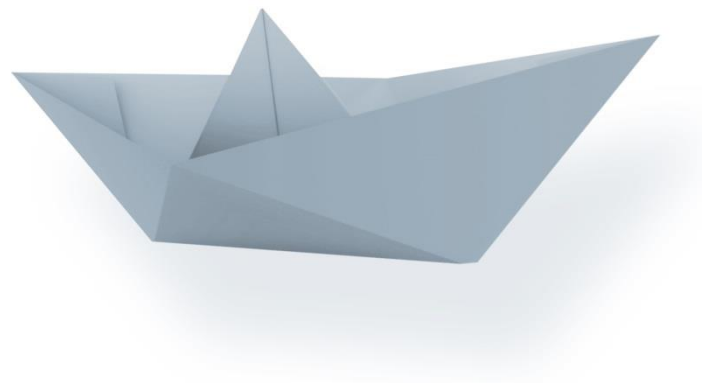
The training course is based on slideware, presented in a class room environment, but can be adapted to incorporate workshops and hands-on sessions.

This course covers frequently used functions and functionalities required to work with and operate the system.

### Modules

All the following modules are included in the 2G System Starter Package training course. Alternatively, we offer bespoke packages of selected modules to cater for special training requirements.

■ <b>M01:</b> nanoGSM System Overview	3
■ <b>M02:</b> nanoBTS Installation and Commissioning	5
■ <b>M03:</b> Configuration Manager	7
■ <b>M04:</b> OMC-R User Course	9
■ <b>M05:</b> Operations and Maintenance	11
■ <b>M06:</b> System Feature Overview	13
■ <b>M07:</b> Radio planning optimisation	15



### How to Book

To enroll on the 2G System Starter Package or to arrange your own bespoke training then please contact us on either by email at [training@ipaccess.com](mailto:training@ipaccess.com) or by phone at +44 1954 713700

## Module 01

### nanoGSM System Overview

#### Introduction

This course will familiarise engineering staff with the network elements of the 2G small cell system, including the BTS, BSC and OMC-R, and identify the major interfaces including A-bis over IP, A and Gb.

#### Course Objectives

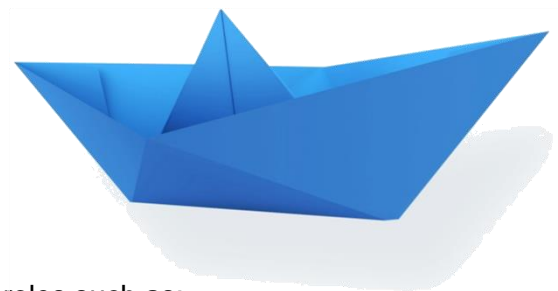
By attending this course, participants will gain an understanding of:

- nanoBTS key features and power supply options;
- BSC key features and components;
- nanoBTS Installer software tools;
- nanoGSM system features available in the latest SR release;
- Configuration Manager, used to easily and quickly define nanoBTS parameters;
- OMC-R, used to manage alarms and element configurations within the nanoGSM system;
- Details of the system specifications of the BSS equipment, including bandwidth requirements, supported services, BSS capacity and backhaul network dimensioning.

#### Who will benefit from this course?

Technical professionals/Engineers in the 2G operator organisation, in roles such as:

- Network Planning (Radio & Core)
- Performance Management/KPI Reporting
- 2G Network Operations
- Customer Care
- Alarm Management



## Module 01 Continued

### nanoGSM System Overview

#### Course Content

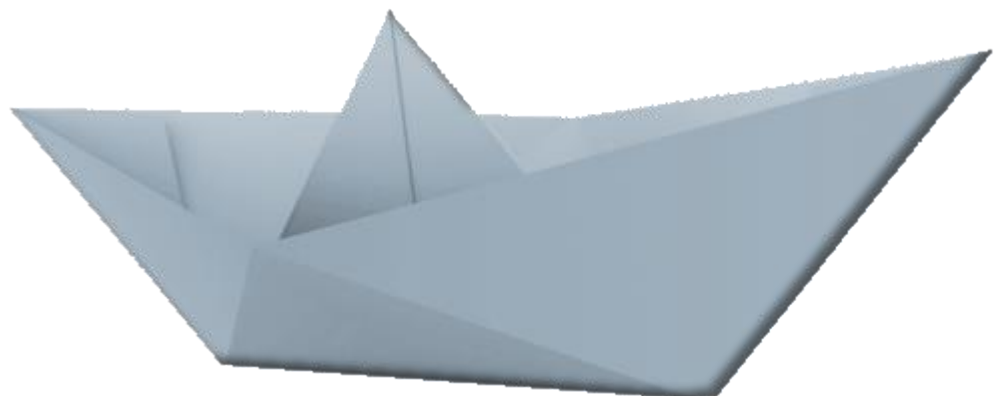
- nanoGSM architecture
- System dimensioning
- nanoGSM feature overview
- Network management
- Performance management

#### Course Pre-requisites

- This is an introductory level course; however it does require delegates to have some GSM and IP experience.

Course material will be provided electronically.

Depending on whether the course takes place in ip.access, or customer premises, access to the required equipment will be arranged.



## Module 02

### nanoBTS Installation and Commissioning

#### Introduction

This course will enable engineering staff to install a nanoBTS at a customer location.

#### Course Objectives

- On completion of this course, participants will gain an understanding of:
- The differences between the various nanoBTS models and their key features;
- How to configure Multi TRX BTSs;
- How to use BTS installer and its use for BTS commissioning;
- How to use network listen to assess the radio environment at the customer site;
- Post Installation calibration and maintenance tasks;
- How to optimise security by enabling SSL connectivity to the BSC.

#### Who will benefit from this course?

Technical professionals/Engineers in the 2G operator organisation, in roles such as:

- Network Planning (radio & core)
- Performance Management/KPI Reporting
- 2G Network Operations
- Customer Care
- Alarm Management

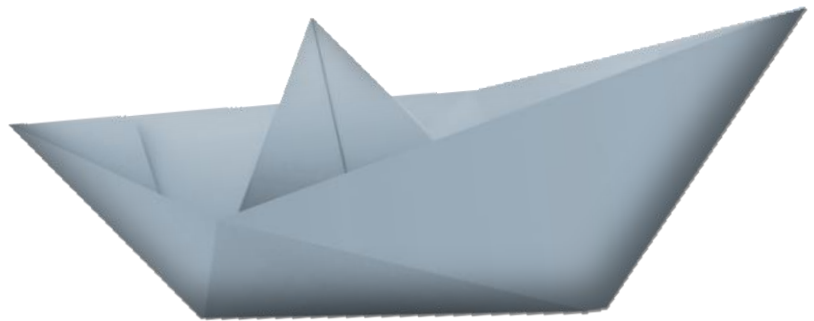


## Module 02 Continued

### nanoBTS Installation and Commissioning

#### Course Content

- nanoBTS hardware
- Deployment of the nanoBTS
- BTS installer application
- nanoBTS configuration
- Post installation validation



#### Course Pre-requisites

- This is an introductory level course; however it does require delegates to have some GSM and IP experience.

Course material will be provided electronically.

Depending on whether the course takes place in ip.access, or customer premises, access to the required equipment will be arranged.

## Module 03

### Configuration Manager

#### Introduction

This course is ideally suited to network operations engineers involved in the supervision of the ip.access BSC who require details on the use of the Configuration manager.

#### Course Objectives

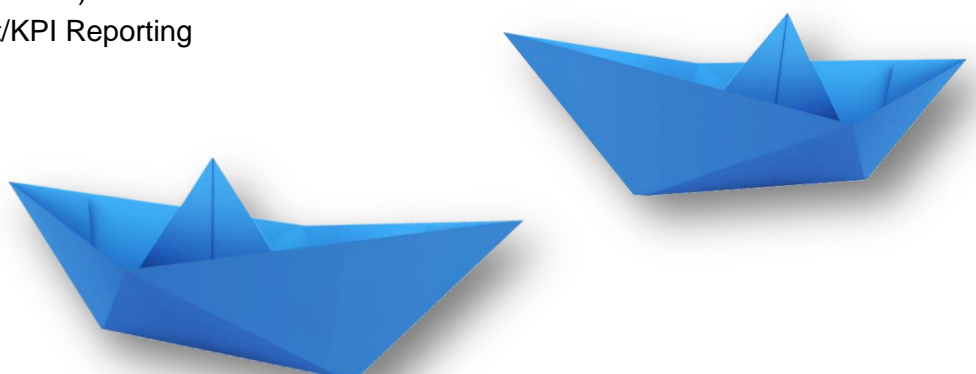
On completion of this course, participants will gain an understanding of

- How to install the configuration manager and connect it to BSC;
- How to use configuration manager for debugging issues;
- How to provision the BSC including A and Gb Interfaces using CIC wizard and BSC properties;
- How to create and delete nanoBTS sites using the Configuration Manager;
- How to create and delete GPRS objects;
- How to create performance manager counters in both the nanoBTS and the GPRS objects;
- How to create a foreign BTS, and delete sites which are no longer managed by the nanoGSM system.

#### Who will benefit from this course?

Technical professionals/Engineers in the 2G operator organisation, in roles such as:

- Network Planning (Radio & Core)
- Performance Management/KPI Reporting
- 2G Network Operations
- Customer Care
- Alarm Management



## Module 03 Continued

### Configuration Manager

#### Course Content

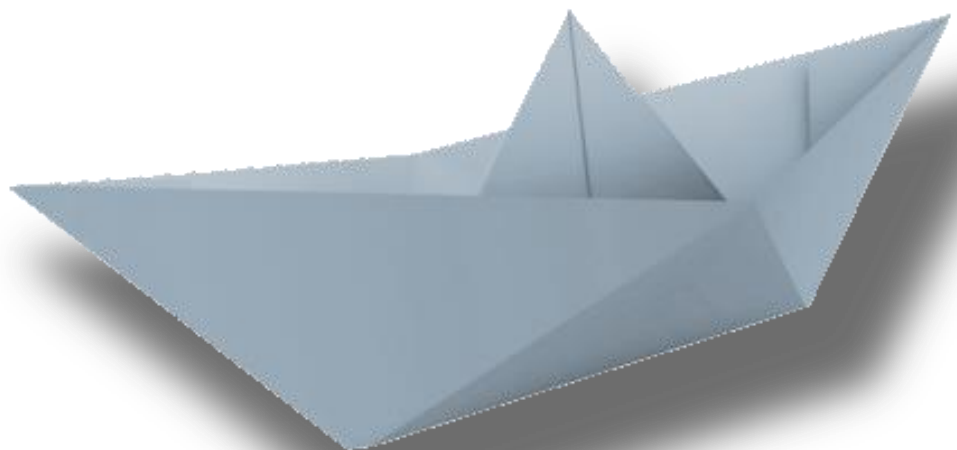
- Configuration manager installation
- Configuration manager display
- Provisioning the BSC
- Creating and deleting nanoBTS sites
- Creating and deleting GPRS objects
- Creating performance management counters
- Creating foreign BTS

#### Course Pre-requisites

- Intermediate level experience in IP Networks, GSM and GPRS will be required.

Course material will be provided electronically.

Depending on whether the course takes place in ip.access, or customer premises, access to the required equipment will be arranged.





## Module 04

### OMC-R User Course

#### Introduction

This hands-on course will allow delegates to learn how to use the nanoGSM OMC-R system to manage a network.

#### Course Objectives

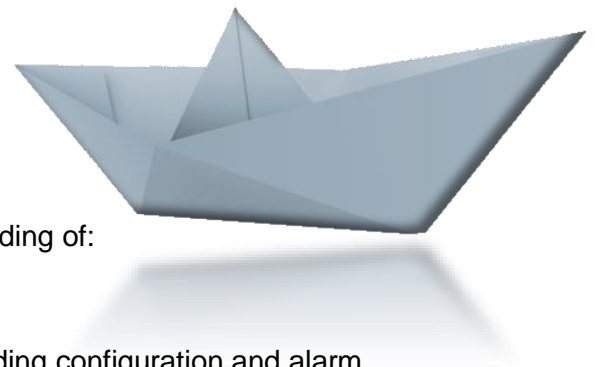
On completion of this course, participants will gain an understanding of:

- OMC-R client installation and configuration;
- How the key elements are displayed in the OMC-R including configuration and alarm displays;
- How to use the OMC-R client in fault management;
- How to collect and analyse performance management information from the BSC and BTS through the OMC-R;
- Creation and deletion of sites via the OMC-R including cell configuration;
- Creation and deletion of GPRS objects;
- Creation and deletion of foreign BTS sites managed by the nanoBSS;
- The configurable GSM parameters within the BSS;
- The user permission access right management via the OMC-R.

#### Who will benefit from this course?

Technical professionals/Engineers in the 2G operator organisation, in roles such as:

- Network Planning (Radio & Core)
- Performance Management/KPI Reporting
- 2G Network Operations
- Customer Care
- Alarm Management

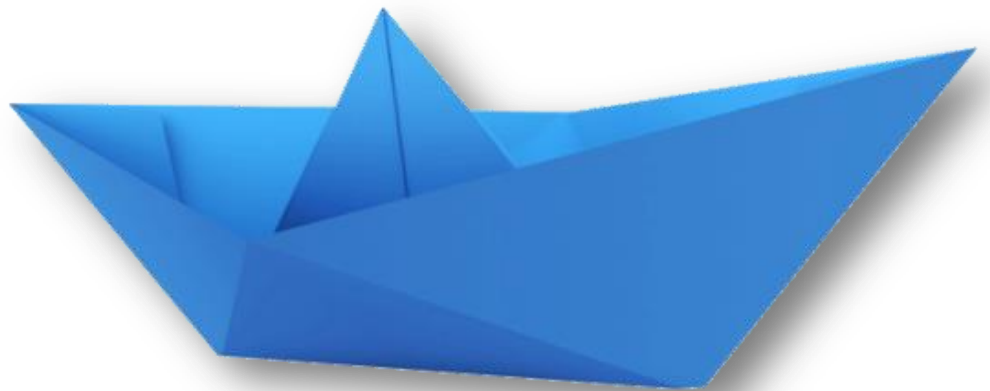


## Module 04 Continued

### OMC-R User Course

#### Course Content

- Creating and deleting management objects
- Changing a management objects attributes
- Alarm management
- Performance management



#### Course Pre-requisites

- Intermediate level experience in IP Networks, GSM and GPRS will be required.

Course material will be provided electronically.

Depending on whether the course takes place in ip.access, or customer premises, access to the required equipment will be arranged.

## Module 05

### Operations and Management

#### Introduction

This hands-on course will enable delegates to operate and manage the nanoGSM network.

#### Course Objectives

On completion of this course, participants will gain an understanding of:

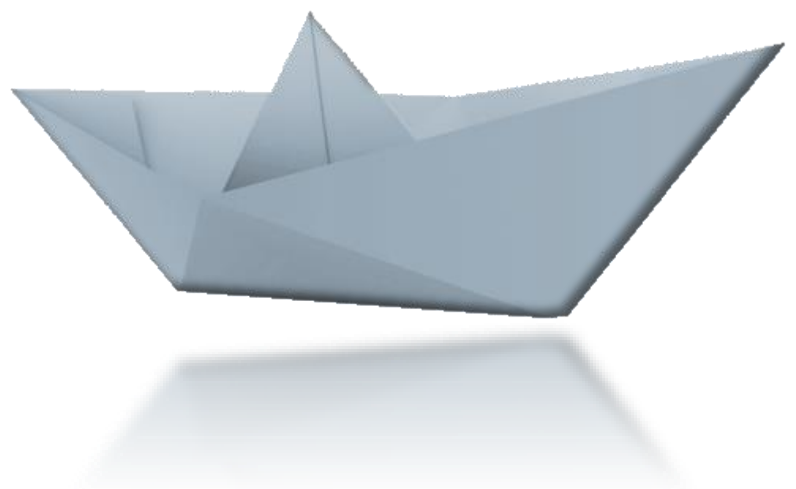
”

- BSC management, including:
  - Stopping and starting BSC processes;
  - Database management;
  - Configuration of the A-bis and Media Signalling Gateway cards;
- The management of files associated with the BSC.
- Practical maintenance procedures associated with the ip.access BSS, including:
  - System backups;
  - Initial fault finding;
  - The collection of log and trace files.

#### Who will benefit from this course?

Technical professionals/Engineers in the 2G operator organisation, in roles such as:

- Network Planning (Radio & Core)
- Performance Management/KPI Reporting
- 2G Network Operations
- Customer Care
- Alarm Management

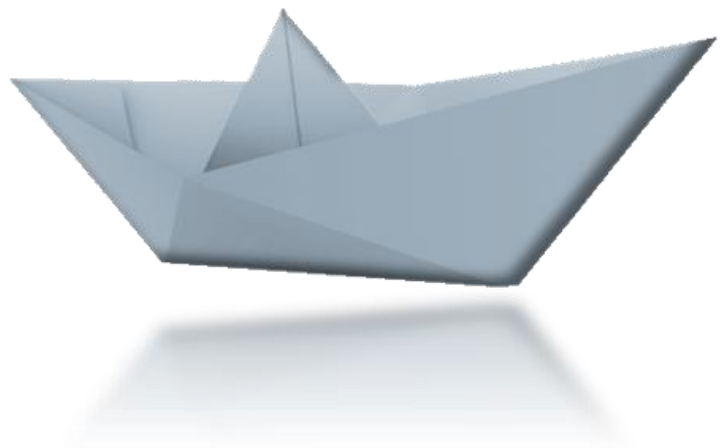


## Module 05 Continued

### Operations and Management

#### Course Content

- BSC platform operations
- BSC processes operations
- BSC fault files and traces
- BSC backup and restore

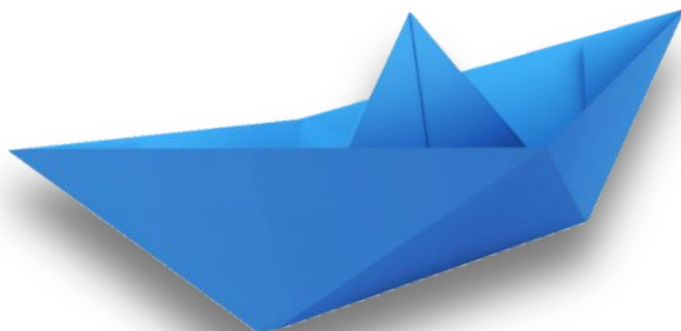


#### Course Pre-requisites

- Intermediate level experience in IP Networks, GSM and GPRS will be required.

Course material will be provided electronically.

Depending on whether the course takes place in ip.access, or customer premises, access to the required equipment will be arranged.



## Module 06

### System Feature Overview

#### Introduction

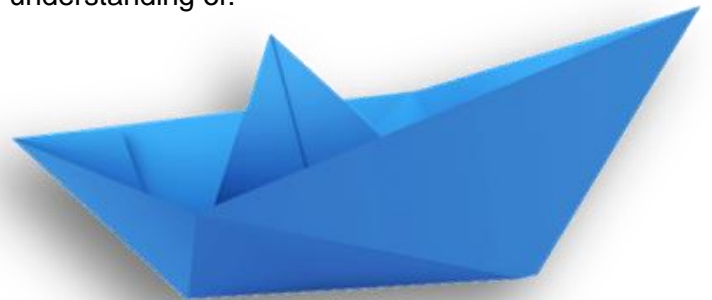
This course provides an overview of the main nanoGSM features.

Understanding the capabilities of the nanoGSM system will allow the delegates to make better decisions regarding system configuration and management.

#### Course Objectives

On completion of this course, participants will gain an understanding of:

- The main nanoGSM system features



#### Who will benefit from this course?

Technical professionals/Engineers in the 2G operator organisation, in roles such as:

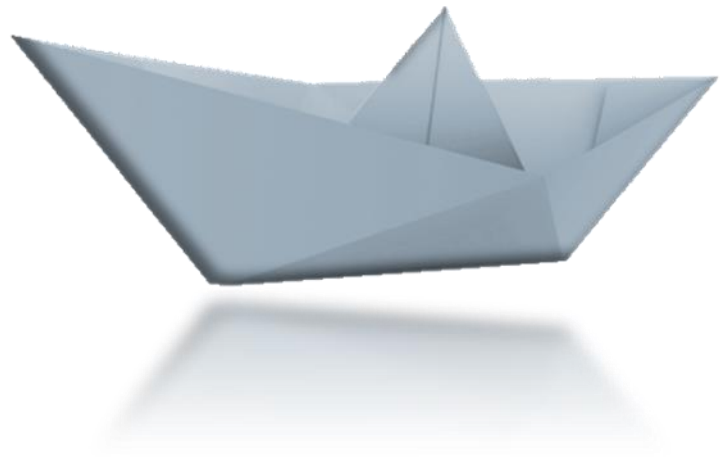
- Network Planning (radio & core)
- Performance Management / KPI Reporting
- 2G Network Operations
- Customer Care
- Alarm Management

## Module 06 Continued

### System Feature Overview

#### Course Content

- GSM Features
- (E)GPRS Features
- A-bis Features
- System Features
- SoftBSC
- BSS Upgrade



#### Course Pre-requisites

- Intermediate level experience in IP Networks, GSM and GPRS will be required.

Course material will be provided electronically.

Depending on whether the course takes place in ip.access, or customer premises, access to the required equipment will be arranged.

## Module 07

### Radio planning & optimisation

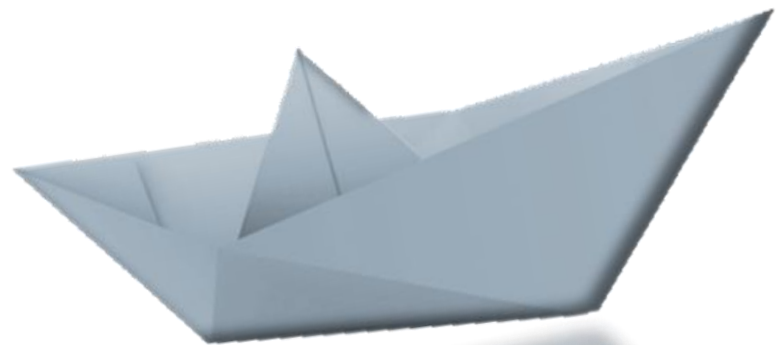
#### Introduction

This course will show delegates how the radio performance of the ip.access nanoGSM BSS can be planned and optimised.

#### Course Objectives

On completion of this course, participants will gain an understanding of:

- Radio network basics;
- Using Network Listen to discover neighbours including a BCCH and decode options;
- Profiling of a site to determine the number of TRXs required, and which channel structure should be applied in the deployment;
- Handover and reselection target configuration;
- How the RF parameters of a nanoBTS BSS site can be managed to best adapt it to a specific location;



#### Who will benefit from this course?

Technical professionals/Engineers in the 2G operator organisation, in roles such as:

- Network Planning (radio & core)
- Performance Management / KPI Reporting
- 2G Network Operations
- Customer Care

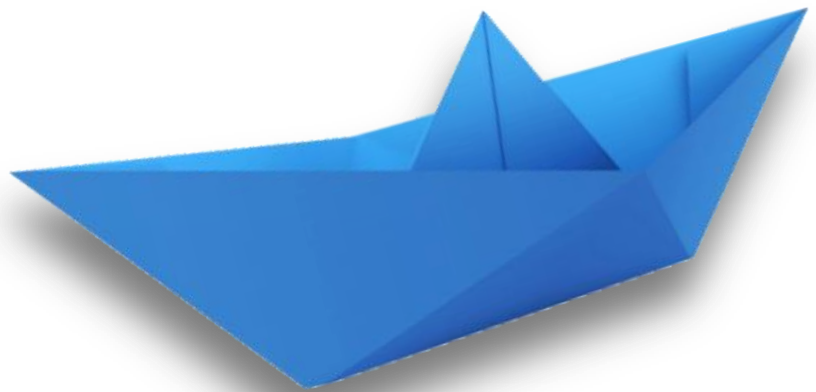
Number of attendees : 10 max

## Module 07 Continued

### Radio planning & optimisation

#### Course Content

- BTS coverage & capacity planning
- BSS dimensioning
- BSS parameter optimisation
- BTS synchronization
- Network listen



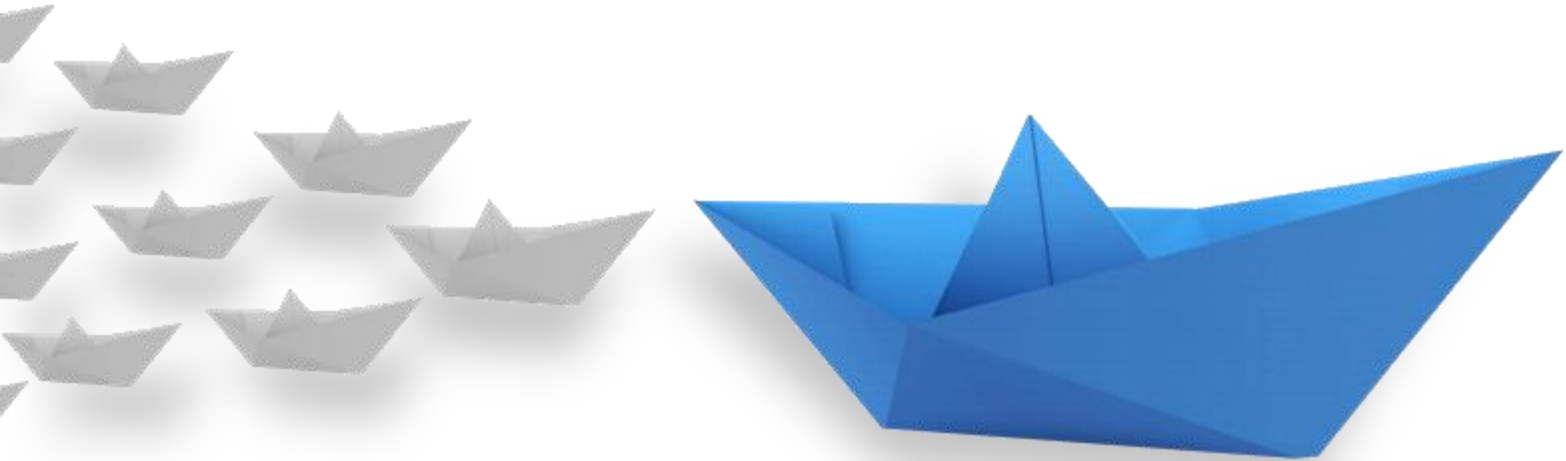
#### Course Pre-requisites

- Experience in radio planning
- Completion of ip.access overview training (Module 01) Course

Material will be provided electronically.

Depending on whether the course takes place in ip.access, or customer premises, access to the required equipment will be arranged.





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