The need to densify mobile network radio coverage means that smaller cells and HetNets are a vital part of the overall RAN solution, which unfortunately makes the management of the radio environment extremely complex. This course therefore sets out to describe the concepts behind self organizing networks, including explanations of self configuration, optimization and healing.

This course will contain the following sections:

Section 1 - SON Concepts
Duration: 2 hours
Topic areas covered include
Self Organizing Networks
Overview of SON concepts
SON Features
Self Configuration
Self Optimization
Self Healing
LTE to LTE-Advanced Evolution
CA (Carrier Aggregation)
RN (Relay Nodes)
MIMO (Multi Input Multiple Output) enhancements

Section 2 - SON Operation

Duration: 2.5 hours
Topic areas covered include
Self Configuration
Auto-Connectivity and Auto-Commissioning
Dynamic Radio Configuration
PCI (Physical Cell Identity) Planning
Self Optimization
Mobility Optimization
MLB (Mobility Load Balancing)
MRO (Mobility Robustness Optimization)
Energy Saving
ICIC (Inter-Cell Interference Coordination)
CCO (Coverage and Capacity Optimization)
RACH (Random Access Channel) Optimization
ANR (Automatic Neighbour Relation)
Self Healing
Cell Outage Detection and Compensation
MDT (Minimization of Drive Tests)

**Section 3 - SON for HetNet (Heterogeneous Networks)**

Duration: 1.5 hours
Topic areas covered include
HetNet Architecture
SON in HetNets
Self-Configuration and Self-Optimisation
Small Cells and HeNBs (Home enhanced Node B)
RN (Relay Node)
Traffic Steering