

# ITRAINONLINE MMTK

## *Trainers' notes: Wireless Troubleshooting*

Developed by: Alberto Escudero Pascual /IT +46

<b>Introduction</b>	This unit provides a general methodology for troubleshooting communication networks. It introduces two approaches to problem solving, briefly describes the OSI model, and presents the tools available to troubleshoot each of the OSI layers.
<b>Timing/duration</b>	+/- 40 minutes. With one vendor-specific tool demonstrated +/- 1 hour.
<b>Content outline and main topics covered</b>	<ul style="list-style-type: none"><li>• Introduction to troubleshooting methodologies (20 minutes)</li><li>• Introduction to basic wireless network topologies and IEEE 802.11 compliant solutions (10 minutes)</li><li>• Introduction to OSI and outline of tools in each layer (10 minutes)</li></ul>
<b>Target audience</b>	Technical staff with a deep interest in understanding how things work so as to be able to identify problems and their causes.
<b>Prerequisite skills/knowledge</b>	<p>Trainers should have a theoretical and “strong” practical knowledge of building wireless networks.</p> <p>Trainers should ideally have real experience operating an ISP in an urban area.</p>
<b>Unit objectives/expected outcomes</b>	<p>By the end of the unit participants should:</p> <ul style="list-style-type: none"><li>• Know what tools are available for troubleshooting each layer of the OSI/Internet protocol stack.</li><li>• Be able to identify the key elements to consider when trying to troubleshoot a network.</li><li>• Be aware of non-standard IEEE 802.11 alternatives and their (dis-)advantages.</li></ul>
<b>Pre-workshop activities</b>	It is recommended that the trainees read the handout unit before the session.

<b>Notes on using exercises</b>	<p>The exercises should be performed in groups of 3-5. After completion, the exercises should be discussed in a larger group together with the trainer.</p> <p>A separate document with guidelines for using the exercises is provided. The guidelines should serve as hints for the trainers about what to discuss.</p>
<b>Resources included with unit</b>	<ul style="list-style-type: none"> <li>• Handout</li> <li>• Trainers' notes</li> <li>• Slides</li> <li>• Exercises</li> <li>• Guidelines for exercises</li> <li>• "Interference Countermeasures" by Onno Purbo</li> <li>• Workshop evaluation form (for trainees)</li> <li>• Materials evaluation form (for trainers)</li> <li>• Copyright statement</li> </ul> <p>The general Wireless Glossary should be used with this unit.</p>
<b>Additional trainer resources</b>	
<b>Equipment needed</b>	Optional: Networked PC and a data projector to demonstrate tools.
<b>Comments</b>	The trainer should supplement this unit with appropriate vendor specific information, for example CISCO/Linksys, 3COM, D-Link, Netgear, Motorola.