

Topic	Content
<b>1. Environment Setting</b>	<ul style="list-style-type: none"> <li>• Install MinGW GCC (32 or 64 bits)</li> <li>• Install JAVA Runtime (32 or 64 bits)</li> <li>• Install Eclipse IDE for C/C++ Developers</li> <li>• DLL (library) file setup</li> <li>• Debug mode in Eclipse</li> </ul>
<b>2. Topology</b>	<ul style="list-style-type: none"> <li>• Macro Cell Topology</li> <li>• Indoor Office Macro Cell Topology</li> <li>• Indoor Hotspot Macro Cell Topology</li> <li>• Small Cell Topology</li> <li>• Generate UE Location</li> </ul>
<b>3. 3GPP Spatial Channel Model (SCM)</b>	<ul style="list-style-type: none"> <li>• SCM 3D Channel Model <ul style="list-style-type: none"> <li>○ Large Scale Fading,</li> <li>○ Small Scale Fading</li> </ul> </li> <li>• 3GPP TR 38.901 <ul style="list-style-type: none"> <li>○ 7.1 Coordinate system</li> <li>○ 7.2 Scenarios</li> <li>○ 7.3 Antenna modelling</li> <li>○ 7.4 Pathloss, LOS probability and penetration modelling</li> <li>○ 7.5 Fast fading model</li> <li>○ 7.6 Additional modelling components</li> </ul> </li> </ul>
<b>4. Scheduler</b>	<ul style="list-style-type: none"> <li>• Round Robin Scheduling</li> <li>• Proportional Fairness Scheduling</li> <li>• Subband Proportional Fairness Scheduling</li> <li>• First In First Out Scheduling</li> </ul>
<b>5. Channel State Information (CSI) Feedback</b>	<ul style="list-style-type: none"> <li>• Channel State Reporting</li> <li>• Hierarchical Codebook (Codebook structure)</li> <li>• Rank Indicator (RI)</li> <li>• Precoding Matrix Index (PMI)</li> <li>• Channel Quality Indicator (CQI)</li> </ul>
<b>6. Signal to Interference plus Noise Ratio (SINR)</b>	<ul style="list-style-type: none"> <li>• SINR Definition</li> <li>• Cell to UE Interference</li> <li>• UE to UE Interference</li> <li>• Cell to Cell Interference</li> <li>• UE to Cell Interference</li> </ul>
<b>7. Hybrid Automatic Repeat Request (HARQ)</b>	<ul style="list-style-type: none"> <li>• HARQ Definition</li> <li>• Full Buffer</li> <li>• FTP1</li> </ul>