

University Suite

- ❖ Complete platform for education on 4G/5G
- ❖ Based on link-level and system-level simulation tools
- ❖ Interactive laboratory exercises
- ❖ Dedicated to universities and training companies

Technical Information

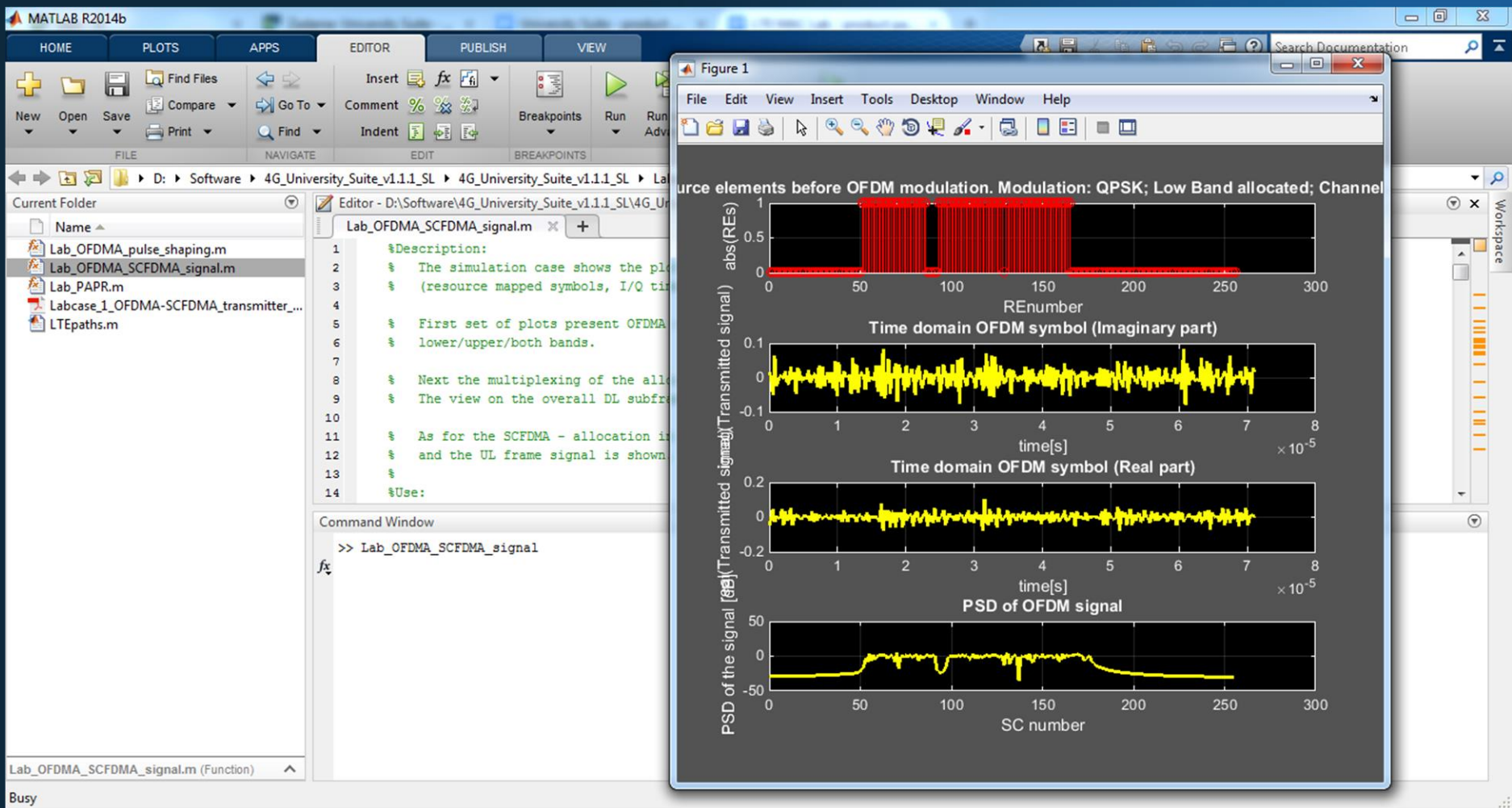
- ❖ Package offered with multi-user license consist of:
 - LTE PHY Lab – link-level simulation tool
 - LTE MAC Lab – system-level simulation tool
 - Set of Laboratory Cases
- ❖ Requires computer with MATLAB v7.12 (R2011a or higher)

Laboratory Cases

1. OFDMA/SC-FDMA transmitter
2. Radio frame generation
3. Radio conditions and system environment
4. MIMO Processing
5. Scheduling algorithms
6. Physical signals generation
7. OFDMA receiver
8. MTC/M2M communication

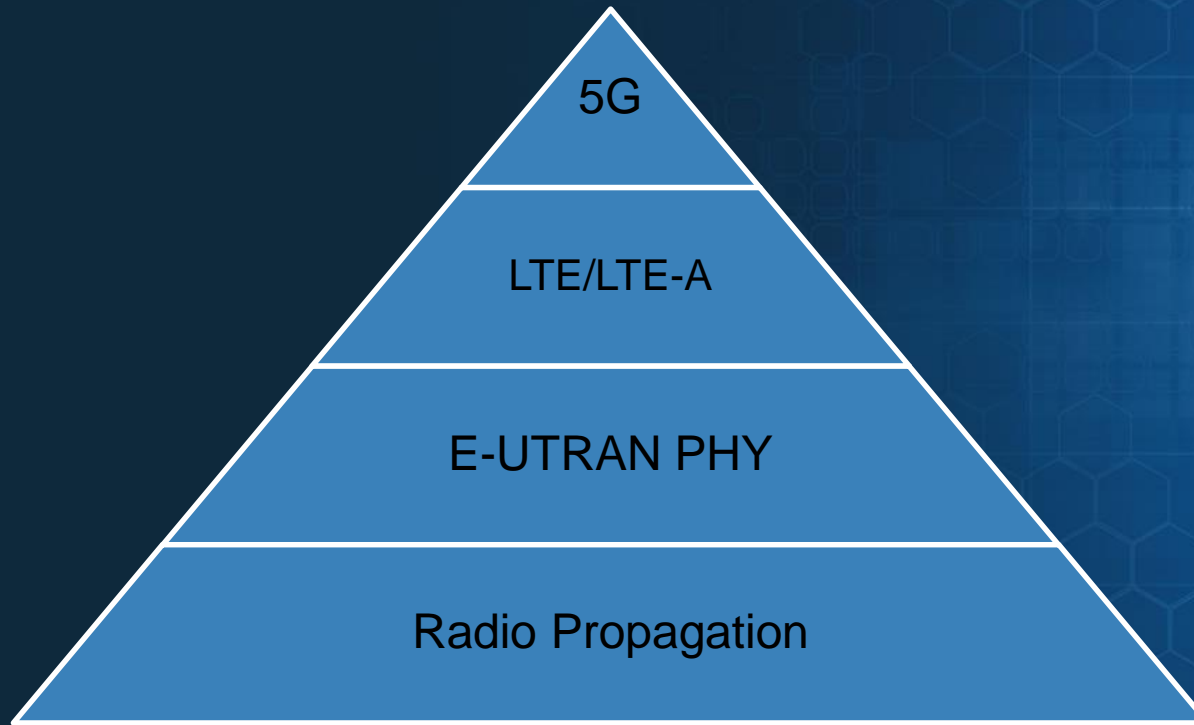
Laboratory Case structure

1. Target of the exercise
2. Required background
3. Theoretical introduction
4. Setting up laboratory environment
5. Warm up exercises
6. Main exercise tasks
7. Test questions
8. Report content



Picture showing interactive exercise within Matlab environment

Teaching areas covered



Practical Usage

Individually

- Laboratory Cases
- Step-by-step guide

Group Assignments

- Manual Optimization
- Observing Resulting Response

Advanced Tasks

- Implement processing chain components
- Network modelling

Benefits

- ✓ Students engaged in Deeper Learning process
- ✓ Attracts students to become active participants
- ✓ Provides users with practical feedback
- ✓ Ability to study a problem at several different levels of abstraction.
- ✓ Develops carrier skills : teamwork, problem-solving, communication skills and handling of the instruments (Matlab)
- ✓ Solid Bridge for students considering R&D and engineering carrier

University Suite in Aalto

University Suite only accessible from workstations in the U256 PC class (Otakaari 1)

In order to properly run all IS-Wireless University Suite features and functions you have to follow these steps:

- ◆ Launch MATLAB. Switch the work directory to path where LTE PHY Lab is installed (e.g. “C:\Programs\lte\University_Suite_v1.3.2”)
- ◆ In aforementioned folder there is the simulator code, introductory materials, exercise script files etc.
- ◆ Run function “AddToolsPaths” in the command line, in order to add all directories including LTE PHY LAB and LTE MAC LAB functions.
- ◆ Navigate to the required Lab Case folder and follow instructions to run scripts

NOTE! Each time you restart MATLAB you have to perform above steps to properly attach all directories.

A city skyline with several skyscrapers under a clear blue sky. Multiple white wireless signal icons (three curved lines) are scattered across the sky, indicating a wireless network.

is-wireless™

