

ROYAL MILITARY ACADEMY
RANK - NAME

Day Month Year



DEFENCE

■ TN515 – Project Kick-off



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1

Introduction

2

What

3

When & How

4

Who

■ Introduction

1

Perform a series of measurements using a pair of monopole antennas

2

Learn with the body what you learned with the brain.

3

Do the link between theory and the results of measurements.

What

- Characterization of the antennas
 1. Physical description and determination of the 3 regions around the antennas
 2. Bandwidth (2 Ae)
 1. Reflection coefficient [0 – 3 GHz]
 2. Working bandwidth and center frequency
 3. VSWR
 3. Impedance adaptation (1 Ae)
 1. At center frequency, adaptation of the impedance of the Ae using lossless lines
 2. New determination of the working bandwidth and the center frequency
 4. Radiation pattern (2 Ae)
 1. Azimuth pattern (on 2π)
 2. Elevation pattern (on π)
 5. Determination of the gain (2 Ae)

What

- Propagation models
 1. Free space link
 1. Determine the received power for different distances
 2. Determine the influence of a polarization mismatch on the received power
 3. Determine the influence of a relative angle between the antennas on the received power
 2. Two-ray model
 1. Validate the 2-ray model with a ground reflection
 3. Small-scale fading
 1. Determine the characteristics of a small-scale flat fading channel

When & How

1. Official periods = during the foreseen hours for the course (20 hours)
2. Extra periods: on request (Rv)
3. Coordination will be necessary (limited HW)
4. Course responsible = coordinator
5. ASAP list groups (names + Ae)
6. Project report
 1. Format: pdf
 2. Report <> copy of slides !!!
 3. Report: meas results, expected theoretical results, explanation of the difference when possible
 4. Delivered NLT 141600 Dec
7. Project presentation
 1. Presentations: 15 Dec 22
 2. Timing
 1. 20 min presentation
 2. 10 min Q & A

Who

- Mr Frédéric MOUSTIER
 - Frederic.moustier@mil.be
 - Tf: 14113
- Adjt Fabian Filée
 - Fabian.filee@mil.be
 - Tf: 14365



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■ Questions





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RMA.be

Royal Military Academy
Brussels