APPROVED by
Order No. P1-__ of __ March 2015 of
the Director of Gridins Enterprise LT UAB

GETTING FAMILIARIZED WITH TELECOMMUNICATIONS EQUIPMENT (SiteMaster, Sunsight Alignment Tool). CABLES, FEEDERS AND THEIR CONNECTION METHODS

TRAINING PROGRAMME (Parts 1, 2 and 3)

INFORMAL TRAINING PROGRAMME

Duration of the training course – 40 hours
Minimum starter education – basic education

THE TRAINING PROGRAMME IS COORDINATED WITH:

Valdas Prušinskas
Head of Production
Gridins Enterprise LT UAB

____ March 2015

Regina Kazarauskienė
Head of Occupational Safety and Health Division
Gridins Enterprise LT UAB

____ March 2015

COORDINATED:

_____
(name of the company, position)

_____
(full name and signature)

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GETTING FAMILIARIZED WITH TELECOMMUNICATIONS EQUIPMENT.
CABLES, FEEDERS AND THEIR CONNECTION METHODS
TRAINING PROGRAMME Part No. 1a

TRAINING PLAN

No.	Subject	Number of hours	
		Total	**Including practical tasks**
	THEORETICAL TRAINING	**7**	**-**
1.	Electromagnetic waves	0,1	-
2.	Radio waves' propagation, frequency, wavelength	0,1	-
3.	Radio visibility, radio horizon. Towers, antennas and their tilt angles	0,1	-
4.	Azimuth, zenith, horizon	0,1	-
5.	Geographic knowledge: longitude, latitude, coordinates' system	0,1	
6.	Cables, feeders and their types, feeder connectors. Connector installation peculiarities	1,5	
7.	Mounting antennas on towers, mechanical tilt angle identification	1,0	
8.	Electronic GPS Sunsight Alignment Tool AAT	2,0	
9.	Presentation and calibration of the Anritsu SiteMaster	2,0	
	PRACTICAL TRAINING	**-**	**7**
	Total:	**14 hrs.**	

Antenna Alignment Tool (AAT) is a tool for aligning antennas.

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QUALIFICATION REQUIREMENTS

Must know:
1) The ways radio waves propagate;
2) Cables, feeders and their connections;
3) Azimuth, zenith, horizon.

Must be able to:
1) Prepare cables, feeders and install connections;
2) Perform measurements by using the Antenna Alignment Tool (AAT);
3) Operate SiteMaster.

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GETTING FAMILIARIZED WITH TELECOMMUNICATIONS EQUIPMENT.
CABLES, FEEDERS AND THEIR CONNECTION METHODS
TRAINING PROGRAMME Part No. 1b

TRAINING PLAN

No.	Subject	Number of hours	
		Total	Including practical tasks
	THEORETICAL TRAINING	**7**	**-**
1.	**Introduction**	**0,5**	**-**
1.1.	Knowledge of electric waves theory	0,25	-
1.2.	Radiowaves, their types and features	0,25	-
2.	**System elements and activities**	**1,5**	
2.1.	Cables, feeders and their connections	0,5	-
2.2.	Mounting feeders, forming feeder routes	0,5	-
2.3.	Feeders' marking and labelling	0,5	-
3.	**Antennas and their types, amplifiers**	**1**	**-**
3.1.	Antennas, their types, amplifiers TMA	0,5	-
3.2.	Electronic tilt regulators RET, frequency combiners	0,5	**-**
4.	**Settings and basic measurements**	**3**	
4.1.	Setting the Antenna Alignment Tool (AAT), measurements	1	-
4.2.	SiteMaster calibration, settings and measurements	2	
5.	**Software**	**1**	
5.1.	Downloading the settings and measurements to the PC, using and saving	1	
	PRACTICAL TRAINING	**-**	**7**
1.	Preparing cables and feeders. Installing the connections	-	3
2.	Installing antennas, identifying the tilt angle	-	2
3.	Performing measurements by using the Antenna Alignment Tool (AAT)	-	1
4.	Operating the SiteMaster	**-**	1
	Qualification examination (for 1 participant)	1	1
	Total:	**14 hours**	

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GETTING FAMILIARIZED WITH TELECOMMUNICATIONS EQUIPMENT.
CABLES, FEEDERS AND THEIR CONNECTION METHODS
TRAINING PROGRAMME Part No. 2a

TRAINING PLAN

No.	Subject	Number of hours	
		Total	Including practical tasks
	THEORETICAL TRAINING	**8**	**-**
1.	Introducing the SiteMaster	1	-
2.	System elements and features	1	-
3.	SiteMaster fundamentals	1	-
4.	Essential settings and measurements	2	-
5.	Measurements' explanations	2	-
6.	Software	1	-
	PRACTICAL TRAINING	**-**	**5**
	Total:	**13 hours**	

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QUALIFICATION REQUIREMENTS

Must know:
1) What is SiteMaster;
2) Line sweeping technologies and methodologies;
3) The ways of using different types of equipment for testing;
4) Main SiteMaster operations and measurements.

Must be able to:
1) Know the technical aspects of SiteMaster;
2) Know the general principles of operating SiteMaster;
3) Cable lengths, cable types, system elements, influencing the SiteMaster measurements;
4) Use the DTF and identify the distance to the location of fault;
5) Find, identify and register documents about the cable line transmission faults.

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GETTING FAMILIARIZED WITH TELECOMMUNICATIONS EQUIPMENT.
CABLES, FEEDERS AND THEIR CONNECTION METHODS
TRAINING PROGRAMME Part No. 2b

TRAINING PLAN

No.	Subject	Number of hours	
		Total	Including practical tasks
	THEORETICAL TRAINING	**8**	**-**
1.	**Introducing SiteMaster**	**1**	**-**
1.1.	Understanding the line sweep quality and clearness	0,5	-
1.2.	Understanding the return loss, impedance and impedance compliance, understanding the DTF	0,5	-
2.	**System elements and features**	**1,5**	
2.1.	Power supply lines and connectors	0,5	-
2.2.	Measuring the return losses	0,5	-
2.3.	Calculating intermediate losses in case of quality installation	0,5	-
3.	**SiteMaster fundamentals**	**1**	**-**
3.1.	Understanding the ways of performing the essential measurements, distance to fault and return losses	0,5	-
3.2.	Importance of settings	0,5	-
4.	**Essential settings and measurements**	**1,5**	
4.1.	SiteMaster functions and operations, calibration	0,5	-
4.2.	Identification of the return losses (RL)/ the voltage standing wave ratio (VSWR)/ distance to fault (DTF)/ distance to fault - return losses (DTF-RL)	1	
5.	**Software**	**1**	
5.1.	Downloading the measurements to the PC, using and saving the data	1	
	PRACTICAL TRAINING	**-**	**5**
1.	SiteMaster functions and operations, calibration	-	1
2.	Basic settings and measurements, different types of measurements, discussing the results of tests	-	2
3.	Antenna characteristics, different problems, system checkups	-	2
	Qualification examination (for 1 participant)	**1**	**1**
	Total :	**13 hours**	

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GETTING FAMILIARIZED WITH TELECOMMUNICATIONS EQUIPMENT.
CABLES, FEEDERS AND THEIR CONNECTION METHODS
TRAINING PROGRAMME Part No. 3a

TRAINING PLAN

No.	Subject	Number of hours	
		Total	Including practical tasks
	THEORY COURSE	**7**	**-**
1.	Introducing the Antenna Alignment Tool (AAT)	1	-
2.	System elements and features	1	-
3.	Antenna Alignment Tool (AAT) fundamentals	1	-
4.	Essential settings and measurements	2	-
5.	Explanation of measurements	1	
6.	Software	1	
	PRACTICAL TRAINING	**-**	**6**
	Total:	**13 hours**	

Antenna Alignment Tool (AAT) is a tool for aligning antennas and performing measurements.

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QUALIFICATION REQUIREMENTS

Must know:
1) What is Antenna Alignment Tool (AAT);
2) Antenna's tilt technologies and methods;
3) Ways of mounting on different types of antennas;
4) Essential Antenna Alignment Tool (AAT) operations and measurements.

Must be able to:
1) Operate the Antenna Alignment Tool (AAT);
2) Know the general principles of mounting the Antenna Alignment Tool (AAT);
3) Know the elements, affecting the Antenna Alignment Tool (AAT) measurements;
4) Perform measurements by using the Antenna Alignment Tool (AAT) – locally and by using a computer;
5) Find, identify and register documents.

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GETTING FAMILIARIZED WITH TELECOMMUNICATIONS EQUIPMENT.
CABLES, FEEDERS AND THEIR CONNECTION METHODS
TRAINING PROGRAMME Part No. 3b
TRAINING PLAN

No.	Subject	Number of hours	
		Total	Including practical tasks
	THEORY COURSE	**7**	**-**
1.	**Introducing the Antenna Alignment Tool (AAT)**	**0,5**	**-**
1.1.	Understanding the AAT	0,25	-
1.2.	Understanding the GPS and AZM	0,25	-
2.	**System elements and features**	**2,5**	
2.1.	Mounting on top	1	-
2.2.	Mounting on the side	1	-
2.3.	Settings according to the method of mounting	0,5	-
3.	**Antenna Alignment Tool (AAT) fundamentals**	**2**	**-**
3.1.	The ways of performing the essential measurements, the distance	1	-
3.2.	Settings and their handling	1	**-**
4.	**Essential settings and measurements**	**1**	
4.1.	Antenna Alignment Tool (AAT) functions and operations	0,5	-
4.2.	Creating a new template, templates' cloning	0,5	
5.	**Software**	**1**	
5.1.	Downloading the settings and measurements to the PC, using and saving	1	
	PRACTICAL TRAINING	**-**	**6**
1.	Antenna Alignment Tool (AAT) functions and operations	-	2
2.	Mounting. Essential settings and measurements, different types of measurements, discussing the results	-	2
3.	Antennas' characteristics, different problems, checking the system	**-**	2
	Qualification examination (for 1 participant)	**1**	**1**
	Total:	**13 hours**	

The training programme was prepared by:

Kestutis Stasiulis, instructor at Gridins Enterprise LT UAB