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## ITU Centres of Excellence Network for Africa

### African Advanced Level Telecommunications Institute (AFRALTI)

#### Training on

#### TV White Spaces

#### Nairobi, Kenya

19<sup>th</sup> to 23<sup>th</sup> September 2016

### TRAINING OUTLINE

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#### COURSE DESCRIPTION

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Title	TV White Spaces
Method of delivery	Face-to-face
Objectives	<ul style="list-style-type: none"><li>• Ensure that participants understand why white spaces. Convince participants to promote white spaces technology in their countries.</li><li>• Assist participants on the best practices toward creating sustainable white spaces project.</li><li>• Provide scientific, engineering, networking and mathematical tools for the design and implementation of a TVWS project.</li><li>• Discuss the elements for a sustainable investor side business model and the regulations governing the usage of white spaces for example TVWS regulations.</li></ul>
Dates	19th to 23th September 2016
Duration	5 days
Registration deadline	31 <sup>st</sup> August
Training fees	USD 1200
Course code	

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#### LEARNING OUTCOMES

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Upon completion of this training, participants will be able to:

- Explain and describe TV White spaces and their applications.
- Understand the topologies and architectures for Broadband access.
- Understand how the spectrum can be repurposed for TV White space

## TARGET POPULATION

This training is targeted at managers, engineers and employees from regulators, government organisations, telecommunication companies and academia, who are interested in understanding, implementation and regulation of TV White spaces. Other institutions and individuals that are dedicated to building their capacity related to TV White spaces operation and deployment are also welcome to participate.

## TUTORS/INSTRUCTORS

NAME OF TUTOR(S)/INSTRUCTOR(S)	CONTACT DETAILS
Dr. Chomora Mikeka	

## TRAINING SCHEDULE AND CONTENTS / AGENDA

### *Training schedule and contents (for eLearning trainings)*

WEEK	MODULE TITLE	TOPICS
1	Module 1:	An exposition on the evolution of the White Spaces, particularly TV White Spaces (TVWS):
2	Module 2:	Key partnerships for establishing a successful TVWS project
3	Module 3:	TVWS network design (Simulation exercise on estimated coverage and deployment overview):
4	Module 4:	Example applications on TVWS network infrastructure (Internet, DSpace, Seismic and GPS (M2M))
5	Module 5	Investor side business model for a typical TVWS pilot network
6	Module 6	Drafting of TVWS regulations and white spaces devices (WSDs) specification listing

### *Agenda (for face-to-face trainings)*

S/N	TVWS Workshop Activities in Zimbabwe	Facilitator
DAY 1	White Spaces and therefore TV White Spaces:	Chomor

(Morning & Afternoon)	Introduction, Term Definitions and Discussions on the TVWS antenna, radios, propagation channel and estimation of white spaces based on spectral sensing and database approach <i>Source: #Slides (Portugal) &amp; TEDx Talk © Chomora Mikeka</i>	a
<b>DAY 2</b> (Morning & Afternoon)	<b>1. TVWS network design and online management tools:</b> based on (a) Carlson BS (b) 6Harmonics BS <i>Source: #Slides (Vic Falls) &amp; Phase II Survey Report © Chomora Mikeka</i> <b>2. TVWS network coverage foot printing with NS-3</b> <i>Source: #Flip-chart data points© Chomora Mikeka</i>	Chomora
<b>DAY 3</b> (Morning & Afternoon)	<b>Antennas and power splitters for TVWS utilization:</b> (designs specifics and performance) <i>Source: #Paper (IST-Africa) &amp; #Patent (3D-Wire Antenna) TEDx Talk © Chomora Mikeka</i>	Chomora
<b>DAY 4</b> (Morning & Afternoon)	<b>Applications of TVWS networks:</b> (education using DSpace, climate data, health, and early warning) <i>Source: #Paper (UC2013) &amp; #Canadian idea on health (x-ray images) and MET-MBCtv proposed network on weather information © Chomora Mikeka</i>	Chomora
<b>DAY 5</b> (Morning)	<b>Regulation, Economics and Business Models for TVWS networks:</b> Group Discussions & Plenary <i>Source: #Provide parameters for modeling © Chomora Mikeka</i>	Chomora
<b>Optional Topic</b>	<b>Interference within TVWS network devices and TV stations</b> <i>Source: #Paper (UC2014) Chomora Boundary-Condition © Chomora Mikeka</i>	Chomora

## METHODOLOGY

Instructor-led facilitation, with power point presentations, interactive discussions and Country examples

## TRAINING COORDINATION

<b>Training coordinator:</b> Name: Mr. Jonathan Mwakijele Email address:jmwakijele@afraiti.org	<b>ITU coordinator:</b> Name: Email address:
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## REGISTRATION AND PAYMENT

Registration and payment should be made online at <http://academy.itu.int/>  
A training fee of USD 1200 per participant is applied for this training. Payment instructions can be found at the afore mentioned link.