



INDEPENDENT COMMUNICATIONS
AUTHORITY OF SOUTH AFRICA

Dynamic Spectrum Alliance Virtual Global Summit

POLICY AND SPECTRUM REGULATION

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Presentation Outline

1. Introduction
2. Organisational Mandate
3. Spectrum Institutional Framework
4. Spectrum Licensing Regulatory Framework
5. South Africa Priorities and Sharing Arrangements
6. Concluding Remarks for the implementation of Spectrum Sharing Mechanisms South Africa



Introduction

- Spectrum is a finite resource requiring prudent management.
- Spectrum has become extremely useful and necessary for the development of economies of many countries thus enabling voice and broadband services for communication of citizens in many regions.
- In this regard, South Africa has been involved in studies regarding the concept of ‘Dynamic Spectrum Sharing’ (DSS) and recognized the need to innovate the existing static spectrum management paradigms towards innovative spectrum management.
- Spectrum management reform is critical in order to meet the demands of future wireless networks and required universal service obligations for electronic communications services.



Organisational Mandate

ICASA is established pursuant to section 192 of the Constitution and in terms of the ICASA Act of 2000, as amended

ICASA is mandated to –

- Regulate electronic communications, broadcasting and postal sectors in the public interest
- Ensure affordable services of high quality for all South Africans

ICASA's Legislative mandate is derived from:

- The Constitution, 1996
- ICASA Act, 2000
- EC Act, 2005
- Broadcasting Act, 1999
- Postal Services Act, 1998
- ECT Act, 2002

ICASA's Policy mandate is derived from:

- National Development Plan, 2012
- South Africa Connect, 2013
- Digital Migration Plan, 2012
- Integrated ICT White Paper, 2016
- National Radio Frequency Policy, 2010



Spectrum Management Institutional Framework

• International



○ International Telecoms Union (ITU)

- World Radiocommunications Conferences (WRC)
- Revise ITU Radio regulations and Table of Frequency Allocations
- Defines Services



• Regional

○ African Telecommunications Union (ATU)

- Coordinate African WRC proposals and inputs
- Task Groups, Spectrum Recommendation African Spectrum Allocation Plan
- Emerging Technologies



○ Southern African Developing Communities (SADC)

- Communications Regulatory Authorities of Southern Africa (CRASA)
- Harmonize SADC band plans and channel arrangements



• Local

○ Department of Communications & Digital Technologies



- Sets policy – Radio Frequency Usage Policy – April 2010
- International Spectrum Management Engagements – WRC Preparations
- Approves National Table of Frequency Allocations developed by ICASA
- Coordination of Security & Government Services Allocations

○ Independent Communications Authority of Southern Africa (ICASA)



- Awarding of Radio Frequency Licenses
- Responsible for Band planning
- Produce Regulations – Radio regulations

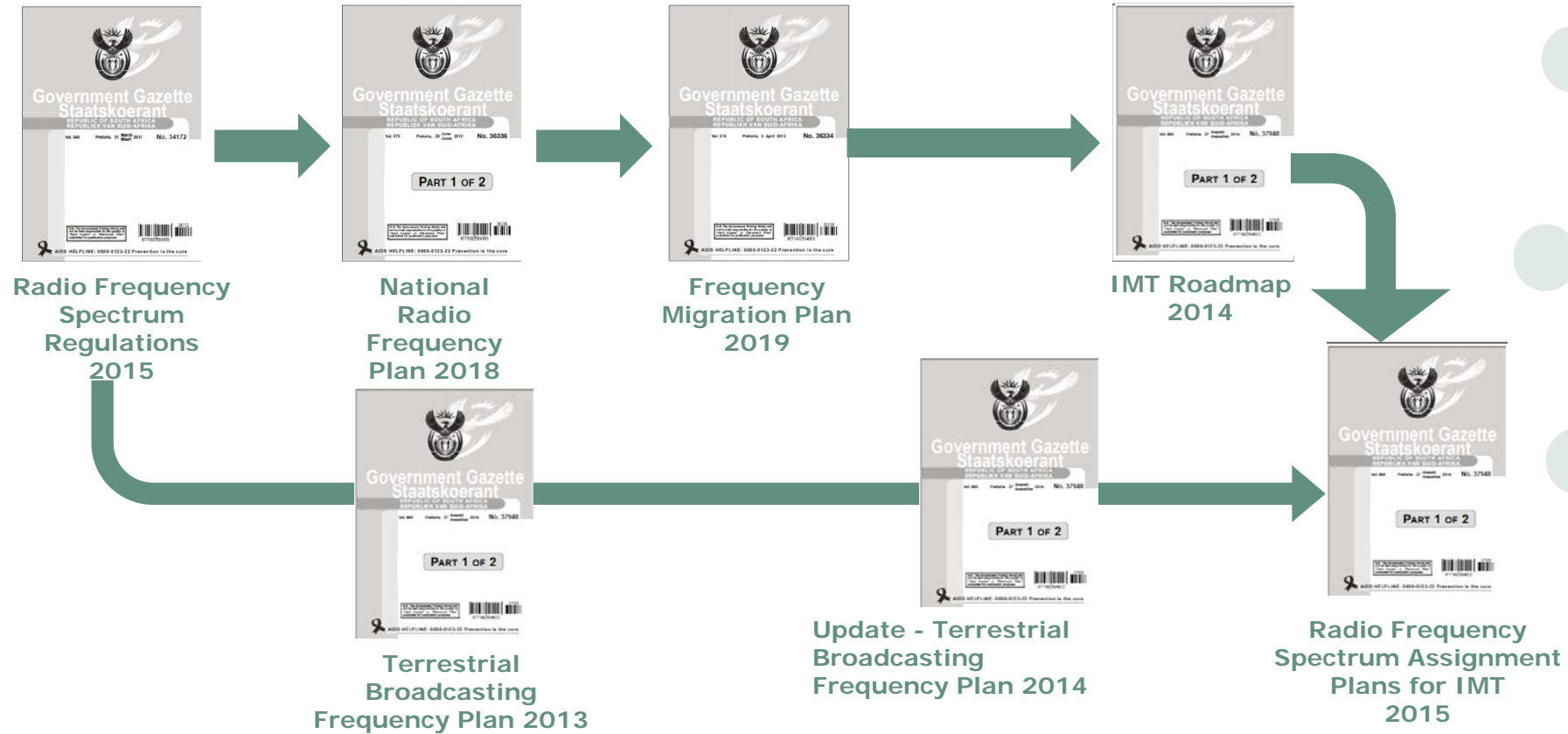
▪ Others

- Department Science & Innovation – SKA and AGA
- Department of Health - Safety & Radiation
- SA Civil Aviation Authority – Aviation
- SAMSA – Maritime Safety



Spectrum Licensing Regulatory Framework

Time-line of Frequency Planning Regulations



Property Rights, Usage Rights and Spectrum Assignment

In SA, the rights in the context of spectrum assignment are assigned in various ways. The usage rights are either exclusive, shared or unlicensed for collective use.

Exclusive

- **Exclusive right to exclude anyone** else from the use of specified spectrum in a specific geographical area.
- This is a **licence (= right)**.
- **Transferability** depends on the spectrum band and the licence Conditions.

Shared with easements

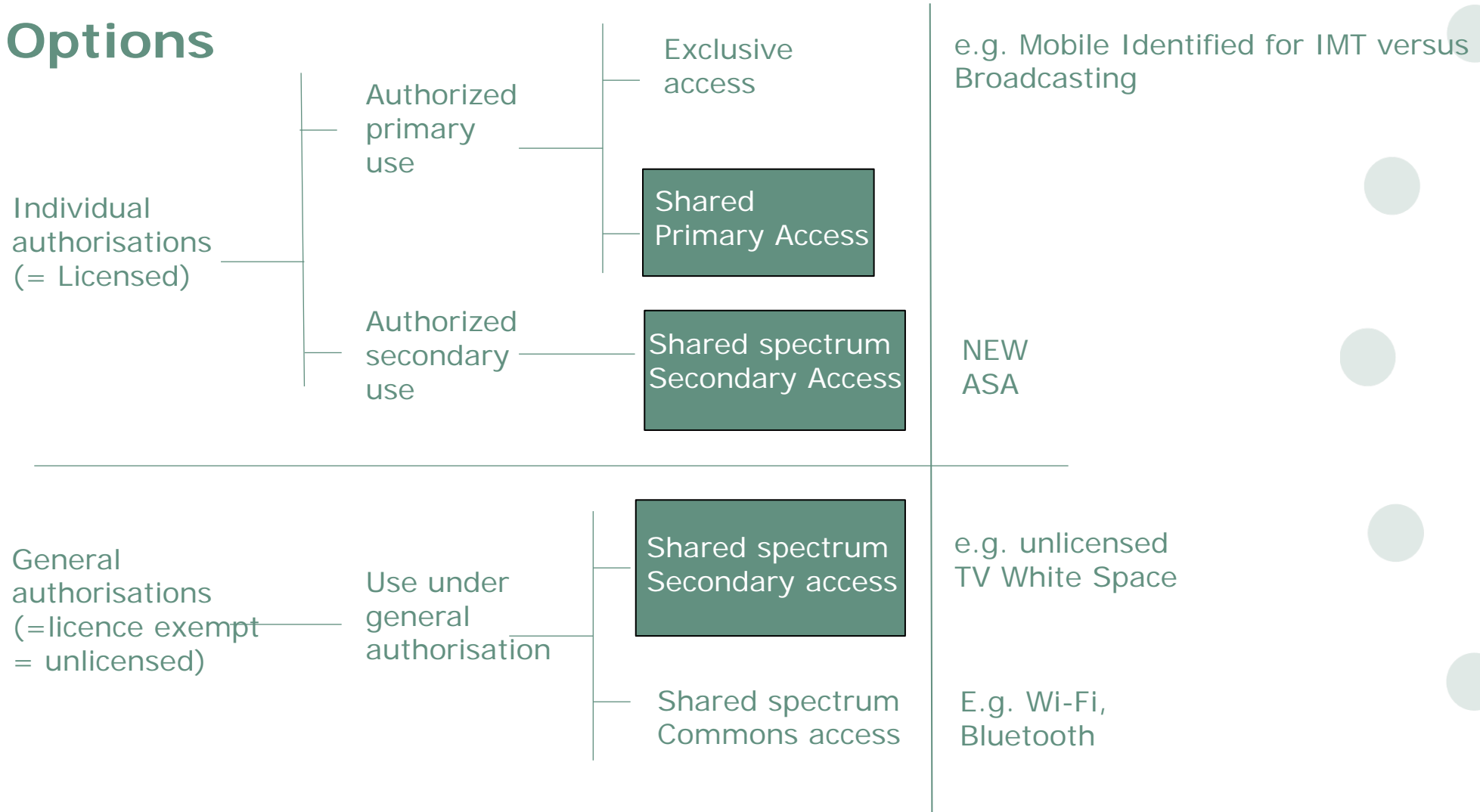
- **Multiple users can have the right to use the same spectrum.**
- Some limiting requirement to avoid interference.
- This is equating to a **licence (= right)**.
- Easement = Right to share, overlay, underlay.

Collective/Comm ons

- **Potentially unlimited numbers of unlicensed users to share the same range of frequencies at the same time.**
- Unlicensed spectrum (no right). No need to obtain licence. Also a form of sharing, however of unlicensed bands.
- Interference avoided by technical standards and etiquette (cooperative, free) among users. No right to protection from interference

Spectrum Authorisation

• Options



SA Priorities (spectrum and spectrum sharing)

Auctioning of IMT Spectrum

- 700 MHz, 800 MHz, 2600 MHz, 3500 MHz
- Invitation to Apply; Qualification Phase, Opt-in Round, The Auction, Award and Assignment Phase

Temporary Spectrum Release for the Covid-19 Pandemic

- Temporary assignments in 700 MHz, 800 MHz, 2300 MHz, 2600 MHz, 3500 MHz bands
- Further extended until 31 August 2021
- Spectrum sharing and Pooling is allowed for the same period
- Ensure Capacity and Coverage for remote working
- Obligations for Virtual Classrooms & Zero Rate Educational Websites

V & E Band

- Regulations and Registration Database Published
- V band (57 – 66 GHz) - Licence Exempt
- E-Band (71-76/81-86 GHz) (Light Licensing Regime – Regulatory and Self Coordinated)
- Standard Operating Procedures in place since 2017

Sharing of Fixed Services frequency bands

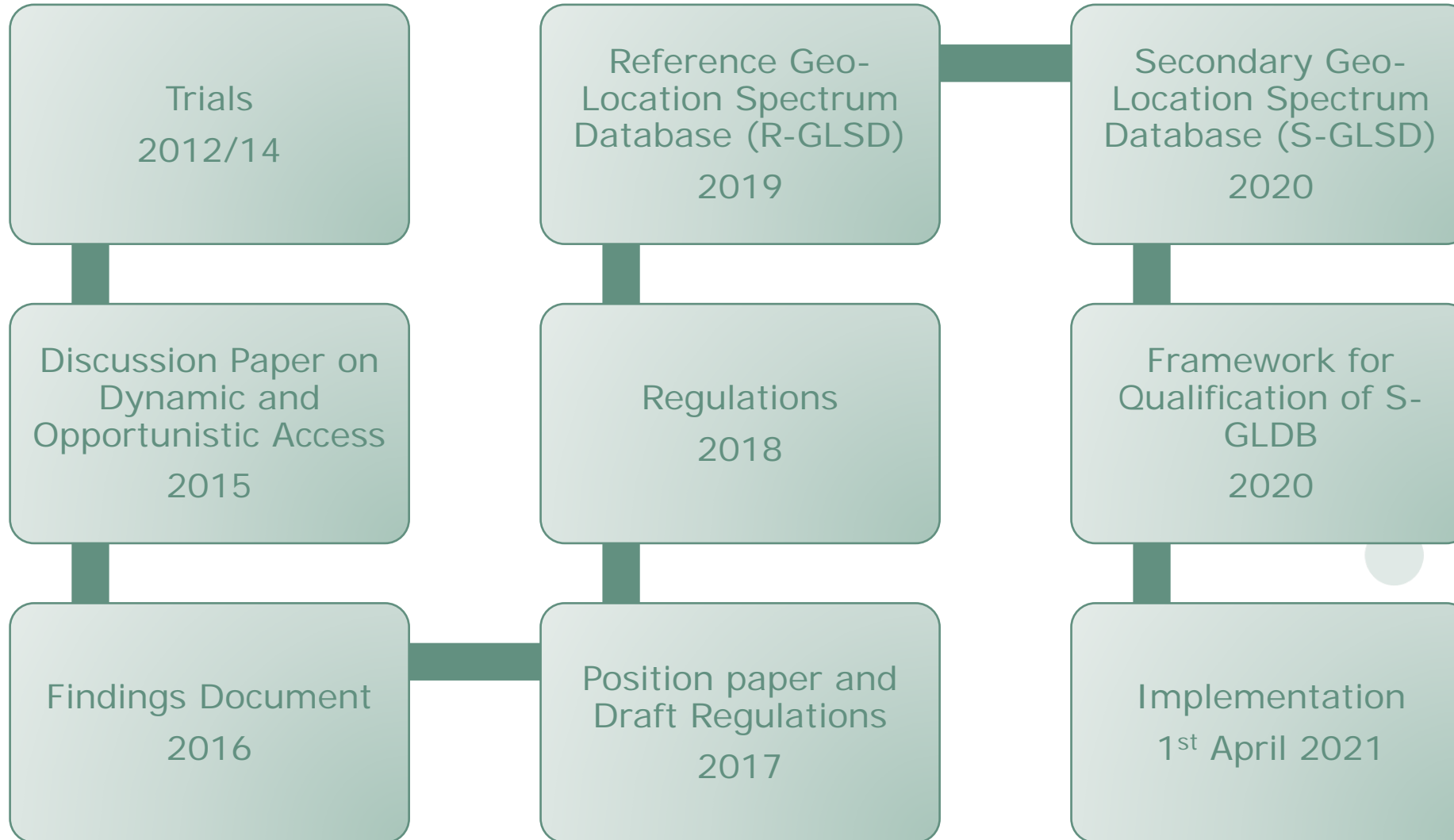
- Microwave links bands and Broadband Fixed Wireless Access (BFWA)

Dynamic and Opportunistic Spectrum Access (TVWS)

- Regulatory Framework completed
- Registration and Usage Process Implemented



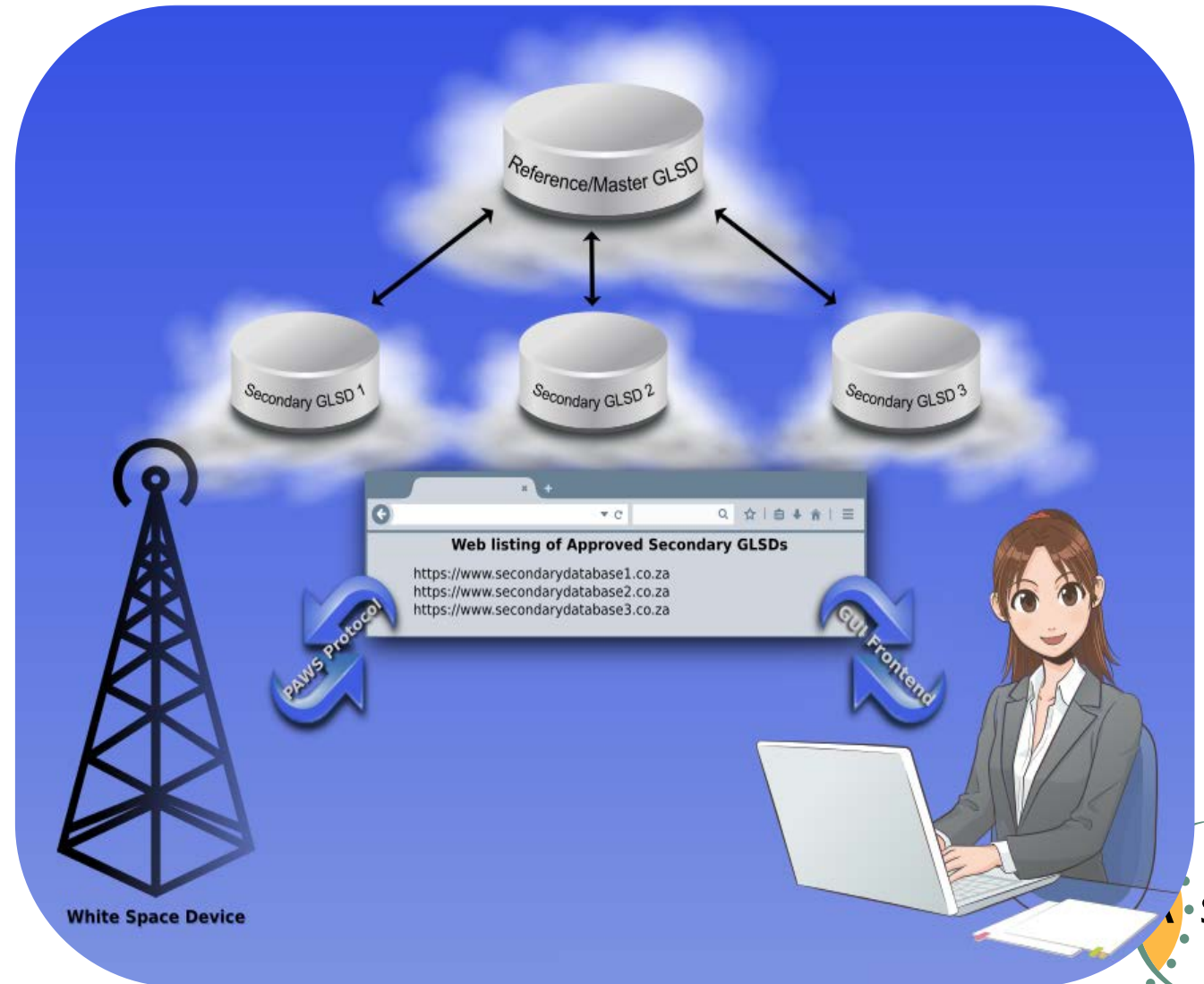
Regulatory Roadmap for TVWS



National Sharing Implementation

TVWS Architecture

1. Reference Geo-Location Database
2. Secondary Geo-Location Databases
3. White Space Devices
4. Protocol to Access White Spaces
5. Web listing of Approved S-GLD; and
6. Front Office at ICASA Office.



Concluding Remarks: Priorities for the implementation of Spectrum Sharing Mechanism in the South African National Spectrum Plans.

- Government and regulators around the world are now taking the next step in the evolution of spectrum policy; “Dynamic Spectrum Access” or DSA, which is placed between the traditional exclusive model of spectrum allocation and the spectrum commons.
- The Authority published a position paper on Dynamic and Opportunistic Spectrum Management in 2017 to:
 - initiate the regulation-making process with the use of TVWS as the first phase of the implementation of Dynamic Spectrum Assignment for Broadband wireless,
 - Promote efficient and effective use of spectrum,
 - to meet high demand for scarce spectrum, and
 - to meet the faster growing capacity, which is exceeding the available spectrum.
- The Authority is now in the process of initiating the second phase of the implementation of Dynamic Spectrum Assignment for Broadband in SA.
 - These technologies and techniques ensure that consumers and their devices have wireless bandwidth when and where they need it.

Thank You

