Background Paper to Development of the SADC Roadmap in Deployment of IMT 2020 technologies

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Abbreviations

AGM	-	Annual General Meeting
CRASA	-	Communications Regulators' Association of Southern Africa
EXCO	-	Executive Committee
GSMA	-	GSM Association
ICNIRP	-	International Commission on Non-Ionising Radiation Protection
ICT	-	Information and Communication Technologies
IMT	-	International Mobile Telecommunications
IoT	-	Internet of Things
ITU	-	International Telecommunications Union
MWF	-	Mobile Wireless Forum
QoS	-	Quality of Service
SADC	-	Southern African Development Community
WHO	-	World Health Organisation

1 INTRODUCTION

This paper aims at providing the background information to the project to develop the Southern African Development Community (SADC) Roadmap to Assignment of Spectrum for International Mobile Technologies (IMT) 2020 technologies. It should be noted that SADC agreed to the technological neutrality principle and thus the focus of the project would be on all emerging IMT Technologies.

Broadband allows for social and economic inclusion of citizens as it allows for reduction in the cost of acquiring information and making more information available leading to expansion of trade, creating jobs and increased access to public services. Broadband has been acknowledged as a driver for trade, better capital use and increases market competition. Much so is the understanding that International Mobile Telecommunications (IMT) 2020 will be the heart of future communications. IMT 2020 supports faster mobile broadband speeds and lower latency than past generations and have enabling features for Internet of Things (IoT).

2 DEVELOPMENT PROCESS OF ROADMAP

In order to pave the way for efficient deployment of IMT 2020 technologies within the region, the Communications Regulators' Association of Southern Africa (CRASA) is striving to harmonise the manner in which the SADC countries deploy the IMT 2020 technologies. This is done in order to should achieve the economies of scale. In this regard, CRASA intends to develop the SADC Roadmap in Deployment of IMT 2020 technologies.

Recognition has been made for the need for capacity building of the CRASA Members in the following areas:

2.1 Spectrum Availability, Spectrum Award and Licensing , Spectrum sharing and trading

This component shall discuss the harmonised bands that should be considered for IMT 2020 spectrum awards and issues surrounding migrating of services in such bands, wherever necessary or co-existence of existing services with IMT 2020 technologies. The Component shall also discuss considerations about choice and design of the spectrum awards mechanism, competition measures, the band structure and band bundling, license scope and conditions and the coverage obligations.

2.2 Spectrum Pricing for Emerging IMT 2020 Technologies

This component shall discuss the considerations that should be taken in decisions on pricing of spectrum. Discussion would have to look into the awarding rights of use (auctions/beauty Contests/First Come First Serve/etc) against the common access (license exemption and general authorisations).

2.3   Synchronisation of the TDD in the 3.5GHz and Cross Border Coordination

Majority of spectrum awards have been made in the 3.5Ghz range (3.3GHz to 4.2GHz) due to its great environment offering a good balance between coverage and capacity. However, noting that there is great pressure on the regulators to award contiguous spectrum to make 80 to 100 MHz available to each operator. In this regards, this component has to discuss how SADC can harmonise the rollout pf TDD mobile networks which may require synchronization of all the TDD networks, either LTE or 5G networks operating in the same frequency range. Considerations have to be made on how the region can approach this synchronisation in order to achieve the most optimal balance between the coverage and the performance levels. In addition, discussions should also look into how the region can address interference issue through effective cross border coordination.

2.4   Security and Privacy issues on IMT technologies including 5G

This component is to support discussions relating to security and privacy issues surrounding the IMT 2020 including 5G. This is in recognition that the new technologies will allow for a high number of connected devices too support a wide range of services, sectors and applications. This vast IMT 2020 ecosytem would carry sensitive and private information and prone to be exploited. It, therefore, calls for need to discuss cyber security risks and mitigation as well as impact of sharing of private information over these IMT 2020 networks.

2.5   Roll Out Considerations in Infrastructure Sharing, Numbering and EMF on IMT Technologies including 5G

This component will focus on various perspectives regarding roll out of IMT Technologies including 5G. This will look into issues concerning Infrastructure Sharing, numbering and Electro Magnetic Field (EMF). Recognising that IMT technologies including 5G entails new deployment of network infrastructure as well as need for small cell deployment to meet the efficiencies required for service delivery, regulators will have to look at how the can encourage network investment through infrastructure sharing.

More so it is being noted that the roll out of IMT 2020 including 5G may mean great increase in the demand of connected devices and this may also mean increase in the numbering resources including the E.164 and E.212 numbers. They may also be need to discuss the issue relating to the IP addressing.

Further the component shall look into the issues relating to the EMF and related health risks on IMT 2020 including 5G. it has been noted that the ICNIRP regulations have been extended to 5G and need to interrogate the changes.

2.6   Quality of Service (QoS) for IMT 2020 Services

SADC has developed harmonised Quality of Service (QoS) parameters for the internet access services. This was introduced in the last review of the SADC ICT QoS Guidelines. Noting that with the greater speed, 5G may introduce newer services including UHD video or 3D video systems. So

there will be need to look into provision of QoS parameters that would allow for greater availability to consumers. In addition, the convergence of mobile with broadcasting services would require a closer look into the QoS parameter set for broadband services.

3   PROPOSED SCHEDULE FOR WORKSHOPS ON IMT 2020

The following is the proposed schedule for various workshop that would allow for development of IMT 2020 Roadmap for SADC:

	WORKSHOP TITLE	DELIVERABLE	STATUS
1	Synchronisation of the TDD in the 3.5GHz and Cross Border Coordination	Section in the Roadmap on Harmonised cross border coordination in synchronisation of TDD in the 3.5GHz in SADC	Done
2	Spectrum Availability, Spectrum Award and Licensing	Section in the Roadmap on Spectrum Availability, Spectrum Award and Licensing	Not Done
3	Spectrum Pricing for Emerging IMT 2020 Technologies	Section in the Roadmap on Spectrum Pricing for Emerging IMT 2020 Technologies	Not Done
4	Security and Privacy issues on IMT technologies including 5G	Section in the Roadmap on Security and Privacy issues on IMT technologies including 5G	Done
5	Roll Out Considerations in EMF exposure on IMT Technologies including 5G	Section in the Roadmap on Roll Out Considerations in EMF exposure on IMT Technologies including 5G	Done
6	Roll Out Considerations in Infrastructure Sharing and numbering on IMT Technologies including 5G	Section in the Roadmap on Roll Out Considerations in Infrastructure Sharing and Numbering on IMT Technologies including 5G	Done
7	Quality of Service (QoS) for IMT 2020 Services	Section in the Roadmap on Harmonisation on Quality of Service (QoS) parameters for IMT 2020 Services and revision of SADC	Done