

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

Experience and Challenges in the Integration of (MRS) M2M/IoT into the South African National Numbering Plan

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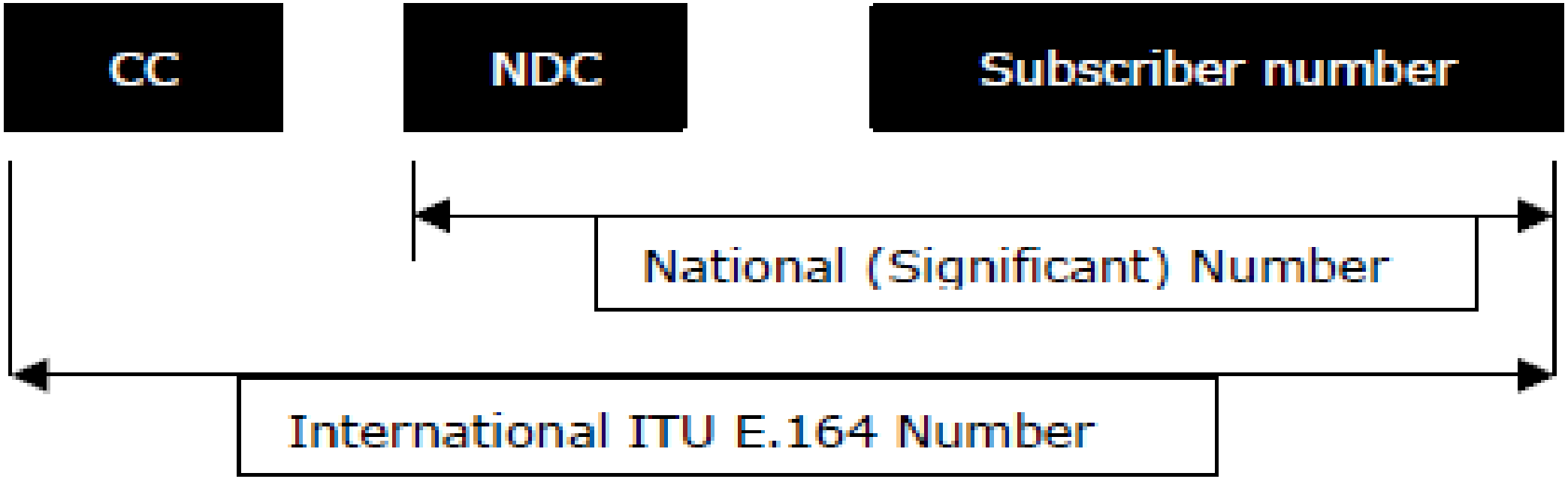
South African National Numbering Plan Overview

SA NUMBERING PLAN OVERVIEW

- ✓ South Africa is a closed numbering system effective 16 January 2007.
- ✓ It is mandatory to dial the full 10-digit telephone number.
- ✓ The format for an international number is guided by the International Telecommunication Union (ITU) Recommendation E.164. It shall be composed of decimal digits arranged in two code fields: the country code (CC) and the national (significant) number (N(S)N).
- ✓ The national (significant) number (either geographic or non-geographic) shall be subdivided into the national destination code (NDC) and the subscriber number.

SA NUMBERING PLAN OVERVIEW- continues

- ✓ The format for international and national numbers is as per figure:



SA NUMBERING PLAN OVERVIEW- continues

- ✓ National numbers, geographic or non-geographic are set out in Geographic and Non-Geographic Numbers

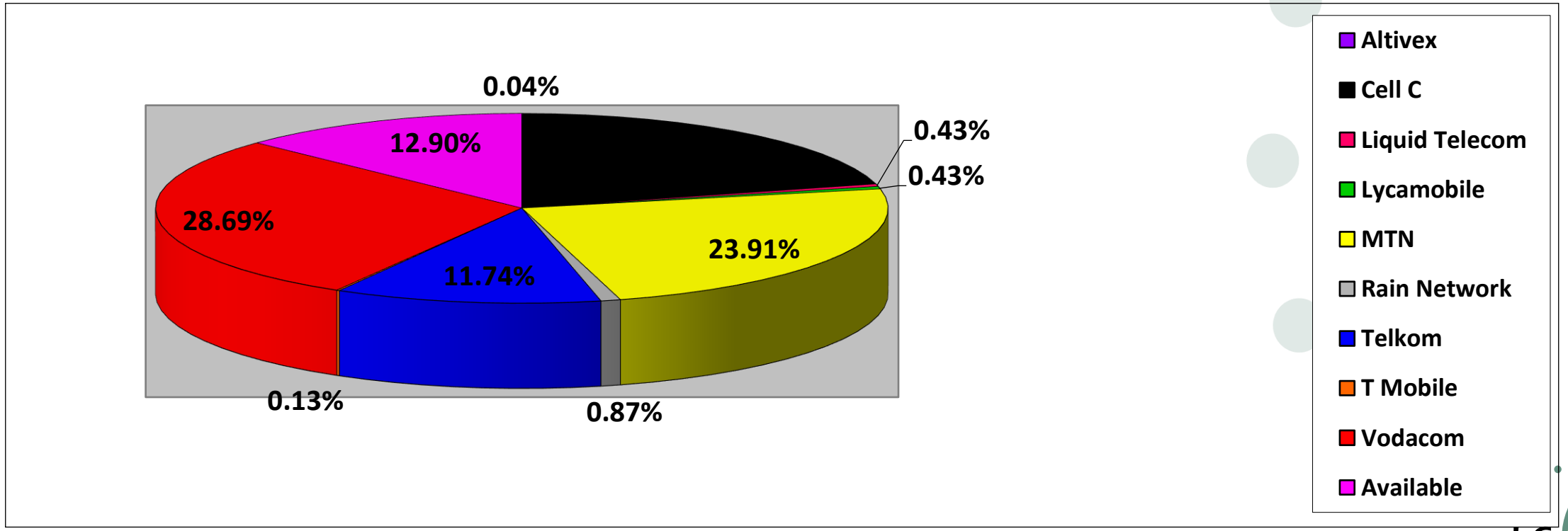
Digits	Significance
00	International prefix
01	Geographic numbers
02	
03	
04	
05	Geographic and Non-geographic numbers
06	Non-geographic numbers
07	
08	
09	



Numbering Review Framework (MRS/ M2M).) and Implications

MACHINE RELATED(M2M) NUMBER CHANGES AND MIGRATION

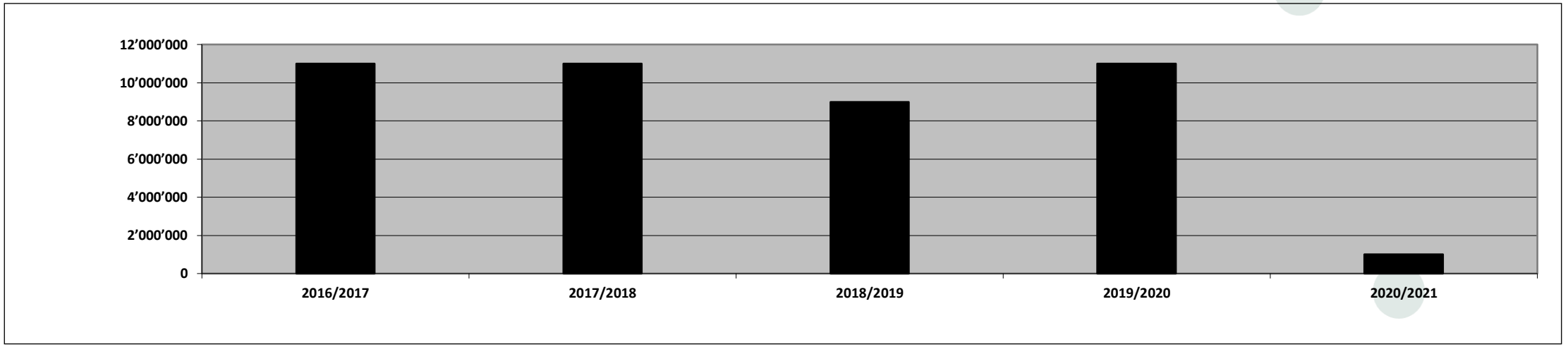
- ✓ **Motivation for the changes:** To ensure that there is scalability to cater to growth in the Telecommunication Industry, Population growth, Evolution of technology, Consumer Choice, Sustainability to avoid depletion, and Catering to future demands.



MACHINE RELATED(M2M) NUMBER CHANGES AND MIGRATION- continues

- ✓ The 2016 regulation introduced a number of changes to the number plan including the consolidation of the release of an additional 140 million mobile numbers 2016 and has since allocated 200 400 000 mobile numbers, **amounting to 87% of the total provisioned mobile numbers.**

- ✓ In 2022 South Africa continued to experience insufficient capacity of 13% for mobile numbers and she, consistently, allocated over 8 million numbers annually except for the 2020/ 2021 due to COVID-19



MACHINE RELATED(M2M) NUMBER CHANGES AND MIGRATION- continues

- ✓ Sub regulations 1 of the South African Numbering Regulations defines "machine-related number" means a non-geographic number that is used to provide a machine-related service and: "machine-related service" means a service whereby,
- (a) communications between two or more machines that require no direct human intervention; or (b) communication originating from a device or machine to a person and vice versa."

- ✓ Sub regulation 16 (3)A machine-related number must have a length of fourteen (14) digits. Table 4. MRS
- ✓ There are 100 trillion unique combinations for 14 digits [300 trillion resource]

096	Released	Machine related services
097	Released	
098	Released	

MACHINE RELATED(M2M) NUMBER CHANGES AND MIGRATION

- ✓ Sub regulations 22 (1) (2) (3) of the South African Numbering Regulations, 2016 stipulated that:

- All machine-related number changes must **be migrated** to the new number range **within a period not exceeding 12 months** from the date of the Regulations coming into force;

- ✓ Bulk SMS/MMS services, which are provided within the previously allocated numbers are exempt from the MRS migration; and

- ✓ Future assignments for bulk SMS/MMS services, that extend beyond the numbering capacities provisioned by licensees as submitted to the Authority, must be in the designated numbering range for MRS.

- ✓ The Numbering Rregulation: https://www.icasa.org.za/pages/numbering



Challenges and Implementation Process

CHALLENGES, MITIGATION STRATEGIES AND IMPLEMENTATION

The first challenge was defining services that were to be classified as M2M) and given many explanations, the term was amended the name from M2M to MRS as can be seen in the regulations.

Secondly, another difficulty was the appropriate digit length as well as the needed capacity (14-digit vs. 11 or 12-digit) ***and migration timeline*** *from the mobile ranges to the dedicated range for MRS*

3rdly licensees requested an exemption not to migrate services that were provisioned for Bulk SMS/MMS due to a unique functionality called "tagging"

CHALLENGESAND **IMPLEMENTATION**

- ✓ The process became driven by a lot of frustrations from the service provider and was chaotic due to real impediments.
- ✓ Service providers/ licensees in some instances stopped engaging ICASA and used their customers to directly speak to the regulator.
- ✓ The initial migration period envisaged was twelve (12) months.
- ✓ Delays were motivated by system changes on the site of service providers, and vendors, and their impact on the public at large.
- ✓ Multiple extensions were requested by services provided the implementation period took just over 2 years (2016 to 2018+months).
- ✓ The complexity of the migration was generally underestimated by the industry and the regulator during consultation processes.



Lessons Learned from the Implementation Process

Lessons learned from the implementation process

✓ The Integration of (MRS) M2M/IoT into the National Numbering Plan based on your country's environment may include conducting an impact analysis focusing on:

- A comprehensive process that includes all scenarios that exist in your country.
- Extensive consultation- that includes, operators, vendors, and the public at large.
- Development of technical standards, particularly, those that should be for certification/ Type approval.
- Reconfigurations of existing network infrastructure time and cost.
- Provision for time to conduct proof of concepts on the upgraded network.
- Awareness programs time and cost
- Compliance and enforcement mechanism

Recommendations for the Integration of (MRS) M2M/IoT into the National Numbering Plan

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Recommendations on best approaches (key issues)

A distinct Numbering Plan Structure for M2M which provides block allocation within a specified range

Consultation-

The Regulator,

Operators and Vendors

Distinct M2M Regulatory Framework

specifying the use of the resource within the national border

Develop process for assignment of the M2M resource

Mechanism for Compliance and Enforcement

Awareness programme to business, operators and subscribers



Thank You

https://www.icasa.org.za/pages/numbering