

Received: XX

Document 5D/XXX-E
XX May 2022
English only

GENERAL ASPECTS

[Indian Administration]

PROPOSAL FOR UPDATE TO THE WORKING DOCUMENT TOWARDS A PRELIMINARY DRAFT NEW RECOMMENDATION ITU-R M.[IMT.VISION 2030 AND BEYOND]

1 Introduction

At the 41st meeting of Working Party 5D (WP5D), the draft version of a WORKING DOCUMENT TOWARDS PRELIMINARY DRAFT NEW RECOMMENDATION ITU-R M.[IMT.VISION 2030 AND BEYOND] was further developed. The document provides initial recommendations on content and a framework for further development.

In this document we provide guidance on the development of the following sections of the document.

- Section 4: Usage Scenarios for IMT for 2030 and Beyond
- Section 5: Capabilities of IMT for 2030 and Beyond

2 Discussion

WP5D at its meeting #41 continued discussions on the usage scenarios and developed initial description. The Indian administration is of the view that the usage scenarios defined for IMT technologies developed for 2030 and beyond need to have the following characteristics:

- i. Usage scenarios defined should clearly characterize the technology evolution from IMT-2020 and address new use cases expected for 2030 and beyond
- ii. Every usage scenario should have capabilities that uniquely differentiate it from others
- iii. A candidate technology developed to address these usage scenarios should be quantitatively evaluated using test environment reflecting a typical deployment of 2030 and beyond

In addition, we prefer to keep the usage of capabilities that have qualitative description to the minimum possible.

2.1 Discussion on Section 4: Usage Scenarios for IMT for 2030 and Beyond

Further at WP 5D #41, there were six usage scenarios under consideration. Based on the criterion offered above, we propose that 5D consider grouping them as follows:

- i. Immersive communication – Usage scenario
- ii. Ubiquitous connectivity – Usage scenario
- iii. Extreme communication – Usage scenario
- iv. Artificial intelligence – Enabler
- v. Sensing and Communication – Enabler
- vi. Sustainability – design Imperative

Based on this categorization, we propose that the IMT-2030 usage scenario make use of the following figure.

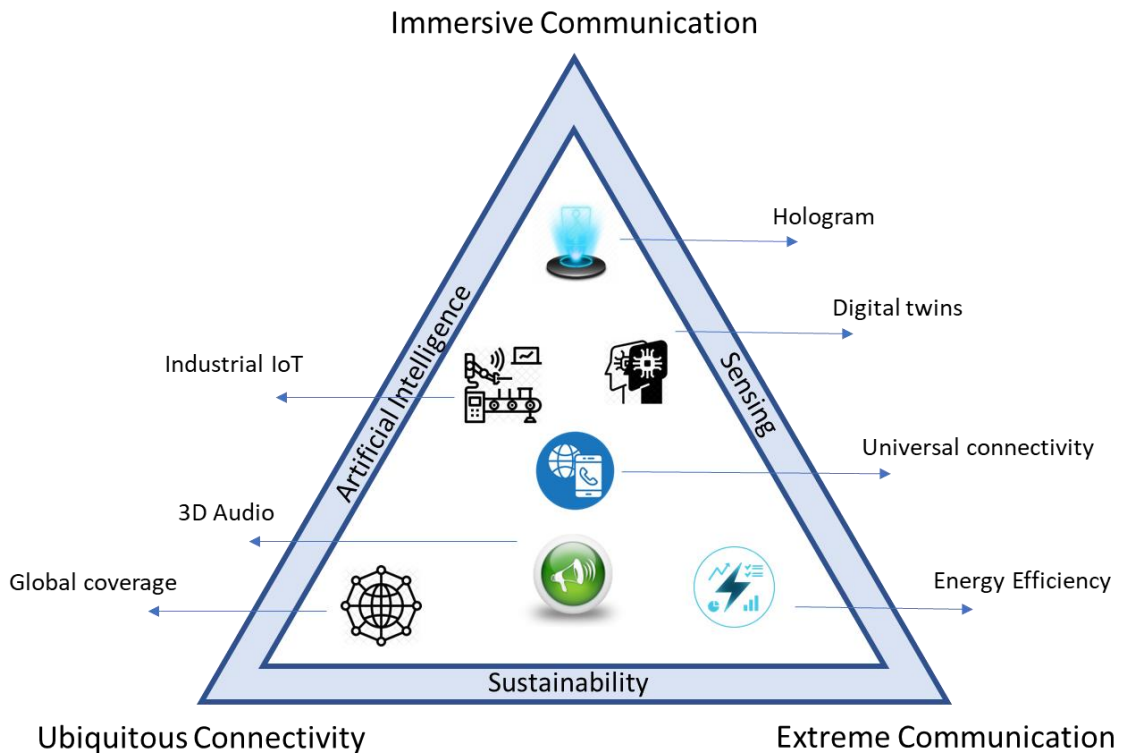


Figure X: Usage scenarios, Enablers & Imperatives of IMT for 2030 and beyond

These usage scenarios are expected to address user and application trends as below:

1. Immersive communication: Extremely high data rate applications like Holograms and Digital twins that would typically target new spectrum bands in the sub-THz range, along with Industrial applications and mobile broadband evolution use cases will be addressed in this usage scenario
2. Ubiquitous connectivity: Services targeting 3D global coverage of IMT technologies and extension of IMT technologies into extremely massive machine type applications will be addressed in this usage scenario
3. Extreme communication: Energy efficient, reliable, and low-latency applications and universal connectivity services will be addressed in this usage scenario

It is further recommended that the description of the usage scenarios capture that the candidate radio technology design should include Sustainability as the design imperative, leverage native Artificial Intelligence capability and support Communication Sensing capabilities. We further propose that 5D prioritize the discussion on Scenarios, followed by the discussions on the description of the usage scenarios once an agreement is achieved in this regard.

2.2 Discussion on Section 5: Capabilities of IMT for 2030 and Beyond

Further at WP 5D #41, there were eleven capabilities with description, five more with titles sans descriptions and few more for future consideration. It is recommended that the Vision recommendation focuses on a set of capabilities that are descriptive of the usage scenarios and represent the clear evolution of the technology from IMT-2020 to 2030 and beyond. A list of descriptive capabilities is described below.

Capability	Value or Range	Usage Scenario
Peak data rate	[200 Gbps]	Immersive Communication
User experienced data rate	[1 Gbps]	
Spectrum efficiency	$[N_s \times \text{IMT-2020}]$	
Area traffic capacity	$[N_a \times \text{IMT-2020}]$	
Mobility	$[N_m \times \text{IMT-2020}]$	
Connection density	$[N_c \times \text{IMT-2020}]$	Ubiquitous Connectivity
Coverage	[99.99% 3D availability]	
Latency	$[N_l \times \text{IMT-2020}]$	Extreme Communication
Reliability	$[N_r \times \text{IMT-2020}]$	

Table Y: Key capabilities for inclusion into Vision recommendation

A range of values for N_x in the Table Y can subsequently be agreed at meeting 5D #43.

3 Proposal

It is proposed that 5D #42 considers the inputs provided in Sec 2 of this document in furthering the development of the Vision recommendation.