

ITUWORKSHOPS

1st ITU Inter-regional Workshop on WRC-19 Preparation

21 - 22 November 2017

Geneva, Switzerland

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1st ITU INTER-REGIONAL WORKSHOP ON WRC-19 PREPARATION (Geneva, 21-22 November 2017)

HAPS / WRC-19 agenda item 1.14

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Chairman, WP 5C***



90th Anniversary
CCIR - ITU-R Study Groups
(1927-2017)

Organized by:





HAPS : highlights

- Station located on an object at an altitude of 20-50 km and at a specified, nominal, fixed point relative to the Earth

-Being located at a nominal fixed points, they have been considered to belong to Fixed Service

-Frequencies :

WRC	Frequency	geographical	Avail BW
WRC-97	47.2-47.5 GHz and 47.9-48.2 GHz		600 MHz
WRC-2000	27.9-28.2 GHz(D), 31.0-31.3 GHz(U) outside Region-2	23 Countries	600 MHz
WRC12	6440-6520 MHz(D), 6560-6640 MHz(U)	5 Countries	160 MHz
WRC15	21.4-22 GHz and 24.25-27.5	Region-2	3.85 GHz
	38-39.5 on a global		1.5 GHz

-The 2 frequency added from WRC15 are much wider then the already existing ones, allowing significant increase of transmission capacity



HAPS : highlights

- **WRC19 AI 1.14 was designated** to consider, on the basis of ITU-R studies in accordance with Resolution **COM6/21 (WRC-15)**, appropriate regulatory actions for high-altitude platform stations (HAPS), within existing fixed-service allocations

- ***Res. 160, associated to this AI, contains indications of elements and considerations related to the need of specific studies, as well as indication of objectives of required study***

WP 5C is indicated as responsible Group, WP 4A, WP 4C, WP 5A, WP 5D, WP 7B, WP 7C are indicated as concerned groups.

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Resolution 160 : considerations

- *there is a need for greater broadband connectivity and telecommunication services in underserved communities and in rural and remote areas;*
- *current technologies can be used for broadband applications delivered by base stations operating at high altitudes;*
- *high-altitude platform stations (HAPS) are one possible means for providing fixed broadband connectivity that would enable wireless broadband deployment in remote areas, including mountainous, coastal and sandy desert areas;*
- *that HAPS may also be used for disaster recovery communications*

But

existing services and their applications shall be protected from HAPS applications, and no undue constraints shall be imposed on the future development of existing services by HAPS;



Resolution 160 : requests

- 1 to study additional spectrum needs for gateway and fixed terminal links for HAPS to provide broadband connectivity in the fixed service taking into account:
 - the existing identifications and deployments of HAPS systems;
 - the deployment scenarios envisioned for HAPS broadband systems and related requirements such as in remote areas;
 - the technical and operational characteristics of HAPS systems, including the evolution of HAPS through advances in technology and spectrally-efficient techniques, and their deployment;
 - to study the suitability of using the existing identifications
 - to study appropriate modifications to the existing footnotes and resolutions
 - to study, *following frequency bands already allocated to the FSo on a primary basis*:
 - on a global level: 38-39.5 GHz, and
 - on a regional level: in Region 2, 21.4-22 GHz and 24.25-27.5 GHz,
 - studies shall *include sharing and compatibility studies to ensure protection of existing services*
- ITU-R Recommendations and Reports to developed , as appropriate



Activities in WP5C

-Following deliverables are under progress, available as Annexes to Chaiman's Report, intended to be finalized as :

- CPM text and workplan
- New Recommendation including deployment and technical characteristics of broadband HAPS, to be used in sharing and compatibility studies.
- New Report including identifications and spectrum needs of (HAPS) broadband links operating in the fixed service.
- Sharing and compatibility studies for HAPS broadband systems in the 6 400-6 520 MHz and 6 560-6 640 MHz frequency
- Sharing and compatibility studies for HAPS broadband systems in the 21.4-22 GHz frequency range in Region 2
- Sharing and compatibility studies for HAPS broadband systems in the 24.25-27.5 GHz frequency range in Region 2
- Sharing and compatibility studies for HAPS broadband systems in the 27.9-28.2 and 31.0-31.3 GHz frequency
- Sharing and compatibility studies for HAPS broadband systems in the 38-39.5 GHz frequency
- Sharing and compatibility studies for HAPS broadband systems in the 47.2-47.5 GHz and 47.9-48.2 GHz frequency range

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