



Harmonized Standards in Satellite Communications

Presented by: Dr Julian Sesena, Chair of Working Group on Harmonized Standards

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WG on Harmonization under the Radio Equipment Directive (RED) 2014/53/EU



- This group is responsible for the maintenance and preparation if needed of Harmonized Standards under the Radio Equipment Directive (RED) 2014/53/EU (replacing R&TTE Directive 99/5 EC)
- Responsible for participating in the committees dealing with implementation guidelines of the RED.
- Responsible for presenting the Harmonized Standards to ETSI SES approval

RED directive (1/3)



- Provisions of Directive 2014/53/EU [i.1] (RE Directive) article 3.2 which state that "*...radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference*".
- Recital 10 of Directive 2014/53/EU [i.1] states that "*in order to ensure that radio equipment uses the radio spectrum effectively and supports the efficient use of radio spectrum, radio equipment should be constructed so that: in the case of a transmitter, when the transmitter is properly installed, maintained and used for its intended purpose it generates radio waves emissions that do not create harmful interference, while unwanted radio waves emissions generated by the transmitter (e.g. in adjacent channels) with a potential negative impact on the goals of radio spectrum policy should be limited to such a level that, according to the state of the art, harmful interference is avoided; and, in the case of a receiver, it has a level of performance that allows it to operate as intended and protects it against the risk of harmful interference, in particular from shared or adjacent channels, and, in so doing, supports improvements in the efficient use of shared or adjacent channels*".
- Recital 11 of Directive 2014/53/EU [i.1] states that "*although receivers do not themselves cause harmful interference, reception capabilities are an increasingly important factor in ensuring the efficient use of radio spectrum by way of an increased resilience of receivers against harmful interference and unwanted signals on the basis of the relevant essential requirements of Union harmonisation legislation*".

RED directive (2/3)



- **Difference between ETSI standard (EN) and ETSI harmonized standard (HEN)**
- **HEN are cited in the Official Journal of the European Commission**
- **Manufacturers or operators can bring equipment to the market in compliance with HEN. A self statement/certificate on compliance is sufficient to bring equipment to the market even without an external notified body certificate.**
- **Most of the HENs are referred to in the European Electronic Communications Committee Decisions (ECC)**
- **Harmonised ETSI standards for satellite equipment, under article 3.2 of the RED, promote interference free operations, and spectrum sharing. Hence, spectrum and equipment is license exempted.**

RED directive (3/3)

Examples of ECCs and HENs relations



<p>ECC/DEC/(17)04</p>	<p>ECC Decision of 30 June 2017 on the harmonised use and exemption from individual licensing of fixed earth stations operating with NGSO FSS satellite systems in the frequency bands 10.70-12.75 GHz and 14.00-14.50 GHz.</p> <p>Amended on 8 March 2019, and updated on 2 July 2021, amended 5 November 2021</p>	<p>NGSO</p>	<p>EN 303 980</p> <p>EN 303 981</p>
<p>ECC/DEC/(18)04</p>	<p>Land based Earth Stations In-Motion (ESIM) operating with GSO FSS satellite systems in the frequency bands 10.7-12.75 GHz and 14.0-14.5 GHz</p>	<p>GSO</p>	<p>EN 302 448</p> <p>EN 302 977</p> <p>EN 303 980</p> <p>EN 303 981</p>
<p>ECC/DEC/(18)05</p>	<p>Earth Stations In-Motion (ESIM) operating with NGSO FSS satellite systems in the frequency bands 10.7-12.75 GHz and 14.0-14.5 GHz. Latest updated 5 November 2021</p> <p>Related report: ECC Report 279. The Use of Earth Stations In-Motion (ESIM) operating to NGSO Satellite Systems in the 10.7-12.75 GHz and 14-14.5 GHz Band (May 2018)</p> <p>Related report: ECC Report 271. Compatibility and sharing studies related to NGSO satellite systems operating in the FSS bands 10.7-12.75 GHz (space-to-Earth) and 14-14.5 GHz (Earth-to-space) (updated January 2019)</p>	<p>NGSO</p>	<p>EN 303 980</p> <p>EN 303 981</p>

Recent WG HARM activities (1/2)



- **ETSI EN 303 980 V1.3.0 (2022-07). Satellite Earth Stations and Systems (SES); Fixed and in-motion Earth Stations communicating with non-geostationary satellite systems (NEST) in the 11 GHz to 14 GHz frequency bands; Harmonised Standard for access to radio spectrum**
- **ETSI EN 303 981 V1.3.0 (2022-07). Satellite Earth Stations and Systems (SES); Fixed and in-motion Wide Band Earth Stations communicating with non-geostationary satellite systems (WBES) in the 11 GHz to 14 GHz frequency bands; Harmonised Standard for access to radio spectrum**
- **EN 303 699 V1.2.1 – Ka NGSO fixed user terminals**

WG HARM standards (1/2)



Standard	Acronym	Services	Satellite system	Frequency ranges (GHz)	
				Down	Up
EN 301 459	SIT	Fixed	GSO	10.7 - 11.7	29.5 - 30
				12.5 - 12.75	
	SUT	Fixed	GSO	11.7 - 12.5	
				19.7 - 20.2	
EN 301 360	SIT	Fixed	GSO	17.7 - 19.7	
				21.4 - 22	
EN 302 977	SUT	Fixed	GSO	10.7 - 11.7	29.5 - 30
				12.5 - 12.75	
EN 303 978	SIT	Fixed	GSO	11.7 - 12.5	
				19.7 - 20.2	
	SUT	Fixed	GSO	17.7 - 19.7	
				21.4 - 22	
EN 302 977	VMES	Mobile and stationary	GSO	10.7 - 12.75	14.0 - 14.5
EN 303 978	ESOMP	Fixed and Mobile	GSO	17.3 - 20.2	27.5 - 30
				21.4 - 22.0	Opt. 30 - 31
EN 303 979	ESOMP	Fixed and Mobile	NGSO	17.3 - 20.2	Opt. 20.2 - 21.2
					27.5 - 29.1
EN 303 980	NEST	Fixed and in-Motion	NGSO	10.7 - 12.75	29.5 - 30
EN 303 981	WBES	Fixed and in-Motion	NGSO	10.7 - 12.75	14.0 - 14.5
					14.0 - 14.5
EN 303 984	ESOA	Aircraft	NGSO	10.7 - 12.75	12.75 - 13.25

Ongoing WG HARM activities (1/2)



- Finalization of the review of EN 303 699 – Fixed earth stations communicating with non-geostationary satellite systems in the 20 GHz and 30 GHz FSS bands
- Review of EN 302 574-1. Harmonised Standard for Mobile Earth Stations (MES) operating in the 1 980 MHz to 2 010 MHz (earth-to-space) and 2 170 MHz to 2 200 MHz (space-to-earth) frequency bands covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Part 1: Complementary Ground Component (CGC) for wideband systems
- Review of EN 303 979, ESOMPs, fixed and mobile, GSO, 27.5–29.1 GHz, 29.5–30 GHz, 17.3–20.2 GHz. Harmonised Standard for Earth Stations on Mobile Platforms (ESOMP) transmitting towards satellites in non-geostationary orbit, operating in the 27,5 GHz to 29,1 GHz and 29,5 GHz to 30,0 GHz frequency bands covering the essential requirements of article 3.2 of the Directive 2014/53/EU
- Review of EN 301 444. Land Mobile Earth Stations (LMES) and Maritime Mobile Earth Stations (MMES) providing voice and/or data communications, operating in the 1,5 GHz and 1,6 GHz frequency bands
- Review of EN 301 681. Harmonised Standard for Mobile Earth Stations (MES) of Geostationary mobile satellite systems, including handheld earth stations, for Satellite Personal Communications Networks (S-PCN) under the Mobile Satellite Service (MSS), operating in the 1,5 GHz and 1,6 GHz frequency bands

Ongoing WG HARM activities (2/2)



- Review of 301 426. Harmonised Standard for Low data rate Land Mobile satellite Earth Stations (LMES) and Maritime Mobile satellite Earth Stations (MMES) not intended for distress and safety communications operating in the 1,5 GHz/1,6 GHz frequency bands
- Review of EN 473. Harmonised Standard for Aircraft Earth Stations (AES) providing Aeronautical Mobile Satellite Service (AMSS)/Mobile Satellite Service (MSS) and/or the Aeronautical Mobile Satellite on Route Service (AMS(R)S)/Mobile Satellite Service (MSS), operating in the frequency band below 3 GHz
- Review of EN 300 487. Harmonised Standard for Receive-Only Mobile Earth Stations (ROMES) providing data communications operating in the 1,5 GHz frequency band; Radio Frequency (RF) specifications
- Review of TR 103 896. Study for off-axis eirp density specifications for Ka band GSO ESOMP in relation with potential revision to EN 303 978
- Review EN 303 978. Harmonised Standard for Earth Stations on Mobile Platforms (ESOMP) transmitting towards satellites in geostationary orbit, operating in the 27,5 GHz to 30,0 GHz

Any further questions?

Contact me:

JSESENA@HI2.ES

