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Federal Network Agency for Electricity, Gas,
Telecommunications, Post and Railways

Draft

SSB OR 024

Draft

Interface description for radar systems for weather observation (Weather radar)

Edition: September 2023

Notified in accordance with Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (OJ L 241, 17.9.2015, p. 1).

As at: 18. September 2023

1 General information

Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 (OJ L 153/62) on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC was transposed in the Federal Republic of Germany by the Act on the making available of radio equipment on the market (Radio Equipment Act – FuAG) of 27 June 2017 (Federal Law Gazette (OJ I No 42, p. 1947), last amended by Article 52 of the Act of 23 June 2021 (OJ I No 35, p. 1858).

Pursuant to § 33(1) FuAG, the Federal Network Agency shall provide specific and appropriate specifications of the radio interfaces as regards radio equipment operated in frequency bands for which the conditions of use are not harmonised throughout the Community.

This interface specification contains information necessary to enable the manufacturer to carry out the relevant tests in relation to the essential requirements applicable to the relevant radio equipment in accordance with the provisions of FuAG § 4(2) and, where applicable, § 4(3).

Furthermore, radio equipment must be designed in such a way that other basic requirements under § 4(1)(1) and (2) FuAG are observed.

For the commissioning and operation of radio equipment, the provisions concerning frequency allocation, in particular those contained in Part 6 of the Telecommunications Act (TKG) of 23 June 2021 (OJ I No 35, p. 1858), last amended on 1 August 2022 by Article 9 of the Act of 20 July 2022 (OJ I No 27, p. 1166), remain unaffected.

The Ordinance on the Detection Procedure for Limiting Electromagnetic Fields (BEMFV) of 20 August 2002 (OJ I No 60, p. 3366), last amended on 4 July 2017 by Article 3(3) of the Act of 27 June 2017 (OJ I No 42, p. 1947), must be complied with.

The Federal Network Agency shall order the enactment of the interface specification in its Official Gazette and publish its reference therein; only the German edition is binding.

2 Area of application

This interface description describes the essential requirements in relation to the FuAG § 4 paragraph 2 for radio equipment for stationary radar systems of the location radio service used for weather observation (weather radar).

Radio equipment within the meaning of this interface specification is to be used for its intended purpose and operated in accordance with the manufacturer's instructions. Directive 2014/53/EU requires manufacturers to provide radio equipment users with appropriate information to enable them to operate the radio equipment as intended and in accordance with the provisions of said Directive. This information shall also include appropriate instructions on cabling and antenna types to be used in conjunction with the radio equipment.

This interface specification replaces SSB OR 014, June 2013 edition, notified under 2013/0499/D.

3 Documents and contact information:

The following cited documents are necessary for the application of this document. For dated references, only the referenced edition of the document shall apply. For undated references, the most recent edition of the referenced document (including any amendments) shall apply.

Presumption of conformity may only be based on versions of harmonised European standards that are included in the current list of harmonised standards within the framework of Directive 2014/53/EU and have been published by the European Commission in the Official Journal of the EU.

- Frequency plan in accordance with the Telecommunications Act (TKG) on the distribution of the frequency range from 0 kHz to 3000 GHz among spectrum usages and on the definitions for such use
Published by the Federal Network Agency
- Radio Regulations¹ (VO Funk),
International Telecommunications Union (ITU), Geneva
(Règlement des radiocommunications, Union internationale des télécommunications (UIT), Genève)
- ITU-R M.1177
Techniques for measurement of unwanted emissions of radar systems
- ITU-R M.1314
Reduction of unwanted emissions of radar systems operating above 400 MHz
- ITU-R M.1372
Efficient use of the radio spectrum by radar stations in the radiodetermination service
- ITU-R M.1461
Procedures for determining the potential for interference between radars operating in the radiodetermination service and systems in other services
- ITU-R M.1849
Technical and operational aspects of ground-based meteorological radars
- ITU-R SM.329
Unwanted emissions in the spurious domain
- ETSI EN 303 347-2
Meteorological Radars; **Harmonised Standard** for access to radio spectrum; Part 2: Meteorological Radar Sensor operating in the frequency band 5 250 MHz to 5 850 MHz (C band)
- ETSI EN 303 347-3
Meteorological Radars; **Harmonised Standard** for access to radio spectrum; Part 3: Meteorological Radar Sensor operating in the frequency band 9 300 MHz to 9 500 MHz (X band)
- CEPT/ERC/REC 74-01
Unwanted emissions in the spurious domain
- CEPT/ECC/REC (02)05
Unwanted emissions
- Commission implementing decision (EU) 2022/2191 of 8 November 2022 on the harmonised standards for radio equipment drafted in support of Directive 2014/53/EU of the European Parliament and of the Council

¹ The Radio Regulations are available in Arabic, Chinese, English, French, Russian and Spanish. In all cases of dispute or doubt, the French text shall prevail.

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4 Technical interface requirements

This SSB includes the technical interface requirements for radar systems for weather observation in the following frequency ranges:

Table 1: Weather radar, 5 600 – 5 650 MHz

Table 2: Weather radar, 9 300 – 9 500 MHz

Table 1: Weather radar 5 600 – 5 650 MHz				
	No	Parameter	Description (Description)	Comments (Comments)
Normative section	1	Radio service (Radiocommunication Service)	RADIODETERMINATION SERVICE	
	2	Intended use/Application (Application)	Weather radar	Primary radar for locating condensed water vapour or tracking weather balloons
	3	Frequency band (Frequency band)	5 600 – 5 650 MHz	Radio Regulations 5.452
	4	Channelling (Channelling)	The occupied bandwidth must be within the limits of the frequency range.	
	5	Modulation/occupied bandwidth (Modulation/Occupied bandwidth)	P0N--, G0N--, Q0N-- Pulse modulation, phase modulation, pulse compression	
	6	Direction/separation (Direction/Separation)		
	7	Transmission power/power density (Transmit power/Power density)	The specific value is stipulated with the frequency allocation.	
	8	Channel access and occupation rules (Channel access and occupation rules)		
	9	Approval procedure (Authorisation regime)	Individual allocation	
	10	Additional essential requirements (Additional essential requirements)		
	11	Frequency planning assumptions (Frequency planning assumptions)	Limit value of unwanted emissions in accordance with EN 303 347-2	
Information section	12	Planned changes (Planned changes)		
	13	References (References)	ITU-R M.1177, ITU-R M.1314, ITU-R M.1372, ITU-R M.1461, ITU-R M 1849, ITU-R SM.329, EN 303 347 - 2 ERC/REC 74-01, ECC/REC/(02)05	
	14	Notification number (Notification number)		
	15	Remarks (Remarks)		

Table 2: Weather radar 9 300 – 9 500 MHz

	No	Parameter (<i>Parameter</i>)	Description (<i>Description</i>)	Comments (<i>Comments</i>)
Normative section	1	Radio service (<i>Radiocommunication Service</i>)	RADIODETERMINATION SERVICE	
	2	Intended use/Application (<i>Application</i>)	Weather radar	Radar for tracking condensed water vapour or tracking weather balloons
	3	Frequency band (<i>Frequency band</i>)	9 300 – 9 500 MHz	VO Funk 5.475B
	4	Channelling (<i>Channelling</i>)	The occupied bandwidth must be within the limits of the frequency range.	
	5	Modulation/occupied bandwidth (<i>Modulation/Occupied bandwidth</i>)	P0N--, G0N--, Q0N-- Pulse modulation, phase modulation, pulse compression	
	6	Direction/separation (<i>Direction/Separation</i>)		
	7	Transmission power/power density (<i>Transmit power/Power density</i>)	The specific value is stipulated with the frequency allocation.	
	8	Channel access and occupation rules (<i>Channel access and occupation rules</i>)		
	9	Approval procedure (<i>Authorisation regime</i>)	Individual allocation	
	10	Additional essential requirements (<i>Additional essential requirements</i>)		
	11	Frequency planning assumptions (<i>Frequency planning assumptions</i>)	Limit value of unwanted emissions in accordance with EN 303 347-3	
Information section	12	Planned changes (<i>Planned changes</i>)		
	13	References (<i>References</i>)	ITU-R M.1177, ITU-R M.1314, ITU-R M.1372, ITU-R M.1461, ITU-R M 1849, ITU-R SM.329, EN 303 347 - 3 ERC/REC 74-01, ECC/REC/(02)05	
	14	Notification number (<i>Notification number</i>)		
	15	Remarks (<i>Remarks</i>)		