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**P4003**

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**Submitter Email:** sirijodha.khalsa@ieee.org

**Type of Project:** New IEEE Standard

**Project Request Type:** Initiation / New

**PAR Request Date:** 06 Dec 2018

**PAR Approval Date:** 08 Feb 2019

**PAR Expiration Date:** 31 Dec 2023

**PAR Status:** Active

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**1.1 Project Number:** P4003

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

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**2.1 Project Title:** Standard for Global Navigation Satellite System-Reflectometry (GNSS-R) Data and Metadata Content

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**3.1 Working Group:** Standard for Global Navigation Satellite System - Reflectometry Data and Metadata(GRSS/SC/GNSS-R)

**3.1.1 Contact Information for Working Group Chair:**

**Name:** Hugo Carreno-Luengo

**Email Address:** hugo.carreno.luengo@gmail.com

**3.1.2 Contact Information for Working Group Vice Chair:**

None

**3.2 Society and Committee:** IEEE Geoscience and Remote Sensing Society/Standards Committee(GRSS/SC)

**3.2.1 Contact Information for Standards Committee Chair:**

**Name:** Siri Jodha Khalsa

**Email Address:** sirijodha.khalsa@ieee.org

**3.2.2 Contact Information for Standards Committee Vice Chair:**

**Name:** Kevin Romero

**Email Address:** romerok1@ca.rr.com

**3.2.3 Contact Information for Standards Representative:**

None

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**4.1 Type of Ballot:** Individual

**4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:** Jun 2020

**4.3 Projected Completion Date for Submittal to RevCom:** Feb 2021

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**5.1 Approximate number of people expected to be actively involved in the development of this project:** 12

**5.2 Scope of proposed standard:** The scope of this effort is to develop a standard for data and metadata content arising from spaceborne Global Navigation Satellite System-Reflectometry (GNSS-R) missions. In particular, this standard would provide a means for describing:

a) the terminology assigned to GNSS-R data and products, such as the product "levels";

b) the structure and content of the data. This includes, but is not limited to: units of measure, data organization, data description, data encoding and data storage format;

c) the metadata. This includes and is not limited to: metadata lineage, methods and algorithms applied to the data, parameters related to the algorithms, citation information, instrument calibration and characterization, and description of the input signals.

**5.3 Is the completion of this standard contingent upon the completion of another standard?** No

**5.4 Purpose:** The purpose of this standard is to provide a set of specifications and recommended practices that can be used to describe any known and future spaceborne GNSS-R dataset, allowing users to work with different GNSS-R datasets at the same time. The definition of such standards would also allow any software that uses this data to fully operate and ingest any spaceborne GNSS-R input data as they will conform to the same standard.

**5.5 Need for the Project:** This project will establish standards and uniformity to the different GNSS-R datasets as much as possible, allowing the writing of standardized software that can be applied to existing and future GNSS-R data. This will contribute to solving well-known problems of different data terminologies,

different units of measures, different data encoding, and different algorithms being used or applied across different GNSS-R datasets, which often translates into the need for different software to deal with each particular dataset.

**5.6 Stakeholders for the Standard:** GNSS-R payload and sensor developers. GNSS-R data providers at the various processing facilities. GNSS-R data processing software providers. GNSS-R users.

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## **6.1 Intellectual Property**

**6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project?**

Yes

**Explanation:** The ISO standards may be used in the development of this standard, and they are copyrighted.

**6.1.2 Is the Standards Committee aware of possible registration activity related to this project?**

No

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**7.1 Are there other standards or projects with a similar scope?** Yes

**Explanation:** The proposed standard could adopt some of the metadata being developed by P4002, the Standard for SAR Metadata Content

However, GNSS-R techniques and data products are distinct from those of SAR so a separate standard is needed.

**7.1.1 Standards Committee Organization:** IEEE GRSS/SC

**Project/Standard Number:** P4002

**Project/Standard Date:**

**Project/Standard Title:** SAR Metadata Content Standard, not yet published

**7.2 Is it the intent to develop this document jointly with another organization?** No

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**8.1 Additional Explanatory Notes :** A user guide will also be produced as part of this standard, which will be particularly useful for first time users.

Note that the scope includes GNSS-R only and will not address reflectometry using other signals of opportunity.