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| U.S. Radiocommunications Sector  Fact Sheet | |
| **Working Party:** ITU-R WP 5B | **Document No:** USWP5B30-yy |
| **Ref:** None | **Date:** August 10, 2022 |
| **Document Title:** Approximation of 3-D Antenna Radiation Patterns from two orthogonal Pattern Slices for use in Radar simulations | |
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| **Purpose/Objective:** Discuss techniques to estimate the radar 3D antenna pattern from the independent radar antenna pattern slices for elevation (vertical) and azimuth (horizontal) defined in Recommendation M.1851. | |
| **Abstract:** Recommendation M.1851 provides methodology to generate the independent radar antenna pattern slices for elevation (vertical) and azimuth (horizontal). The existing methodology to combine these slices into a 3D pattern for use is simulations works well for Omni directional antenna but is less accurate for radar directional antenna.  Propose to include an estimated 3D antenna pattern to use for radars to be included in M.1851 after discussions. This work is only technical and not related to any specific WRC agenda item. | |
| **Fact Sheet Preparer:** Raafat Nasser, ACES Inc. for US Army | |

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| Approximation of 3-D Antenna Radiation Patterns from two orthogonal Pattern Slices for use in Radar simulations | |

Introduction

Recommendation M.1851 provides methodology to generate the independent radar antenna pattern slices for elevation (vertical) and azimuth (horizontal). The existing methodology to combine these slices into a 3D pattern for use is simulations works well for Omni directional antenna but is less accurate for directional antenna.

**Proposal**

The United States of America would like to include, from existing literature and from methodology already being used in Matlab antenna toolbox, an estimated 3D antenna pattern to be use for radars to be included in M.1851 after discussions by the delegates.

**Attachment: 1**

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