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| U.S. Radiocommunications SectorFact Sheet |
| **Working Party:** ITU-R WP 5B | **Document No:** USWP5\_\_\_\_\_ |
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| Document Title: Working Documents towards Preliminary Draft Report on Terahertz Time Domain Spectroscopy as a Radiodetermination Service above 71 GHz  |
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| **Purpose/Objective:** To document the characteristics and spectrum needs of Terahertz Time Domain Spectroscopy as a Radiodetermination Service |
| **Abstract:** This input will describe the need for and characteristics of Terahertz Time Domain Spectroscopy (often referred to as “Terahertz Spectroscopy” in the technical literature although in WP5D the latter terminology has a different meaning). This technology was developed in the 1990s and was adapted by NASA for critical safety-related nondestructive testing uses in Space Shuttle program in the 1990s. The technology using narrow impulses to generate signals with bandwidths >100 GHz for short range (<1m) sensing. Such technology is manufactured in several countries, used by NASA and US military and is sold commercially for applications such as real time quality control of many manufacturing processes. However, its use outside of Faraday cages violates the terms of **5.340** in that it must overlap bands in which “all emissions are prohibited”. Establishing this as a radio determination service use meets that service definition and will permit sharing consideration under the terms of WRC-19 Res. 731 - originally proposed by the US as well as CEPT at WRC-2000. Almost all commercial use of this technology is indoors. |