

FORM 442 QUESTION 7: EXPERIMENTATION DESCRIPTION

Moog Navigation and Surveillance Systems (NaSS) designs, develops, and manufactures Tactical Air Navigation (TACAN) equipment and Distance Measuring Equipment (DME) for military and commercial applications.

As the equipment is developed, it must be tested in real-world conditions in order to ensure that it operates as intended and required. Also, equipment returned to NaSS for repair often must be tested before being returned to the customer. In addition, existing models of equipment must be tested after being modified for any of the following reasons:

- Redesign to replace obsolete components
- Redesign to improve performance and/or efficiency
- Modification due to requirements of a specific customer.

The existing equipment that would be covered by the license being applied for includes:

- MM-7000 Series – A family of TACAN systems for fixed-base, shipboard, and mobile applications. The MM-7000 is available in various configurations and with many options, and is now in use in several countries throughout the world, and soon will be in use in additional countries. A portable version is also being designed. The system is currently in production.
- AN/URN-32 – A derivative of the MM-7000 used by the U.S. Navy as a replacement for the obsolete AN/URN-25 in both fixed-base and shipboard applications. The system is currently in production.
- AN/TRN-26 – A TACAN system for both fixed base and mobile applications, which is in use by the U.S. Air Force and in several countries throughout the world. The system is no longer in production, but is still supported as necessary.
- AN/TRN-41 – A portable TACAN system used by the U.S. Air Force and U.S. Marine Corps, and in several countries throughout the world. The system is not currently in production, but a new model, the AN/TRN-41(TW) soon will be.
- AN/TRN-47 – A derivative of the AN/TRN-41 used by the U.S. Marine Corps. The system is currently in production.
- MM-6800 – A shipboard version of the AN/TRN-41 used by the U.S. Navy. The system is currently in production.
- MM-6900 – A limited-production, fixed-base TACAN system. Only two units exist. The system is no longer in production, but is still supported as necessary.
- 2010 – A TACAN system used in several countries throughout the world in both fixed-base and mobile applications. The system is currently in production.
- AN/TRN-48 – A mobile version of the 2010 TACAN system for the U.S. Air Force. This is a new system that has just been nomenclature and will soon be in production.
- 2020 – A DME system used in fixed-base applications in several countries throughout the world. The system is currently in production.
- AS-3240A – A TACAN antenna used primarily with shipboard applications, but which can also be used with fixed-base and mobile applications. The antenna is currently in production.
- AS-4502 – A TACAN antenna used with the AN/TRN-41 and AN/TRN-47 portable TACAN systems. The antenna is currently in production.
- dBS 900 – A family of TACAN antennas used with fixed-base applications. The antennas are currently in production.
- dBS 950 – A new TACAN antenna, designed to be the successor to the dBS 900 family, to be used with fixed-base applications. The antenna will soon be in production.

Current research and experimentation includes development and testing of a portable TACAN system using MM-7000 technology and the development and testing of the dBS 950 TACAN antenna. These programs are estimated to be completed within the next 24 months.

The ongoing research and experimentation by NaSS will provide TACAN and DME systems and antennas with increased efficiency and reliability over systems currently in use, as well as providing faster and easier diagnostic and repair procedures and lower power requirements, all of which will contribute to lower cost and energy usage, with less down time, for customers.

For over 40 years, the research and development efforts of NaSS and its predecessor organizations have provided continual improvement in TACAN systems, and this will continue in the future.