8551 Rixlew Lane, Ste. 360
Manassas, Virginia 20109
Phone (703) 366-2723
Fax (703) 366-2724

Media Release

Contact: ION National Office
Phone: (703) 366-2723

FOR IMMEDIATE RELEASE
9 A.M. EDT, January 27, 2022

DR. CHARLES K. TOTH ELECTED TO INSTITUTE OF NAVIGATION 2022 FELLOW MEMBERSHIP

The Institute of Navigation Announces that Dr. Charles K. Toth has Been Elected to Fellow Membership

Manassas, Virginia, January 27, 2022 - The Institute of Navigation (ION) announced that Dr. Charles K. Toth has been elected to Fellow membership during the ION International Technical Meeting (ITM) and Precise Time and Time Interval Systems and Applications (PTTI) meeting held January 25-27, 2022 at the Hyatt Regency Long Beach in Long Beach, California.

Dr. Toth was recognized for significant contributions to the development and implementation of multi-sensor integrated navigation systems, and for demonstrated excellence as an academic mentor and professional leader.

Election to Fellow membership recognizes sustained professional accomplishments that have significantly contributed to the advancement of the arts and sciences of Positioning, Navigation and/or Timing (PNT) in the areas of technology, management, practice or teaching and a demonstrated and sustained impact on the PNT community. Fellows have maintained an observable presence in the ION community over the long term, including contributions to ION programs and publications.

Dr. Charles K. Toth is the key architect of the concept, development, and implementation of the first mobile mapping system (MMS), one of the first civilian applications of GPS. This revolutionary technology became the frontrunner of acquiring street data for visualization to support location-based services, with thousands of vehicles equipped with the latest sensors-acquired data 24/7 for the internet-based giants. For the past 25 years, he has been one of the three international leaders organizing the International Symposium on Mobile Mapping Technology (MMT).

In late 1990s, Dr. Toth led the OSU team in the Airborne Integrated Mapping System (AIMS), which delivered the first-in-the-world fully digital directly georeferenced high-accuracy airborne mapping system prototype based on the tight integration of GPS and the inertial navigation unit (IMU). This technology was first used commercially during the 9/11 Ground Zero emergency mapping operations. Subsequently, Dr. Toth led significant research efforts on direct georeferencing of remote sensing platforms, introducing GPS/IMU-based sensor orientation into the mapping community, and is generally credited with coining the terms direct georeferencing and indirect georeferencing.

Dr. Toth was one of the principal architects behind the design and prototyping the NGA-sponsored novel multi-sensor and AI-based personal navigator (PN) for emergency crews and dismounted soldiers. The

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originality of this contribution stemmed from using artificial neural networks and fuzzy logic to model human locomotion to facilitate navigation when other sensors failed, all by implementing a knowledge-based system.

Dr. Toth is a research professor in the Department of Civil, Environmental, and Geodetic Engineering at The Ohio State University. He is recognized for establishing professional partnerships between ION and ISPRS, FIG, and IAG. He received an MSc and PhD in Electrical Engineering as well as a PhD in Geo-Information Sciences from the Technical University of Budapest in Hungary.

About ION
The Institute of Navigation is a not-for-profit professional organization advancing Positioning, Navigation and Timing (PNT). The Institute is a national organization whose membership spans worldwide. Additional information about the ION can be found at ion.org.

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