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RNS REACH

Gooch & Housego PLC
("G&H" or the "Group")

Successful Launch of Satellite Laser Communication System

Innovative G&H photonic systems and components launched in space on board the Optical Data Relay Satellite as part of Japan's new inter-satellite network

Gooch & Housego PLC (AIM:GHH), the specialist manufacturer of optical components and systems, announces that G&H photonic systems and components have been successfully launched in space and are performing an important role in Japan's new inter-satellite network.

G&H photonics technology is at the heart of a laser communication system known as LUCAS (Laser Utilising Communication System), which uses hardware developed by Japan's NEC Corporation for the Japan Aerospace Exploration Agency (JAXA), a government organisation.

JAXA and NEC recently announced the launch of LUCAS on board the Optical Data Relay Satellite, which was launched from JAXA's Tanegashima Space Center in Kagoshima, Japan, using an H-IIA rocket.

The pioneering LUCAS system pushes the performance envelope in terms of data rates and latency with the aim of offering near real-time availability of satellite data. Use of the system will show how laser communications can be a viable solution for future high-speed and scalable space communications.

Using G&H's high-reliability undersea terrestrial communications capabilities as the starting point, the LUCAS system takes the Company's fibre optic systems and photonic technologies into space. Two types of laser communication systems have been developed: one for geostationary satellites and one for earth observation satellites deployed on the low Earth orbit (LEO).

LUCAS relies on power-efficient fibre optic and semiconductor laser technology at 1.55 µm. The laser communication equipment is designed to withstand the challenging phase of launch, as well as long term radiation exposure whilst in orbit. LUCAS photonics technology deployed on-board the Optical Data Relay Satellite will be also used on JAXA's future advanced earth observation satellites named DAICHI 3 (ALOS-3) and DAICHI 4 (ALOS-4).

The LUCAS system has two optical amplifier systems, designed and manufactured by G&H, which are used to create an all-optical bidirectional link between geosynchronous orbit (GEO) and LEO satellites. A high-power amplifier system is responsible for boosting the optical signal level before it goes out into space. A low-noise amplifier is used at the receiver side to amplify the very weak signals after having propagated in space for tens of thousands of kilometres.

Both optical amplifier systems are manufactured in G&H Torquay and include novel fiber-optics, space-grade laser electronics in addition to NEC-manufactured digital electronic boards for telemetry/tele-command. We are grateful to NEC for their technical collaboration regarding robustness against the space environment during the design and evaluation phases. Fully-hermetic, space-grade semiconductor laser modules manufactured in G&H Boston are also used in both the transmitter and amplifier systems. The amplifier flight models delivered passed system-level acceptance testing, including mechanical shock, vibration and operation in vacuum.

To the best of our knowledge this is the first time 1.55 µm optical fibre amplifiers have been deployed in the GEO orbit.

Stratos Kehayas, Chief Technology Officer of Gooch & Housego, commented:

"The amplifier system launched is packed with G&H technology. A testament to the power of vertical integration, we used our unique component base in Torquay, UK and Boston, USA to develop novel and high-performing space photonic systems for satellite laser communications. We also created the necessary space-grade system manufacturing and assembly procedures and applied these in world-leading, purpose-built cleanroom facilities in Torquay, UK to manufacture these amplifiers.

"I am very proud and grateful to be part of this truly amazing team. It has been a very challenging mission, but through innovation, perseverance and, above all, teamwork, we delivered our first system and made history, together. What started as a dream and a system design scribbled in a lab book a few years ago, became a state-of-the-art commercial system orbiting our planet. We are grateful to NEC for selecting us to walk this path together and innovate by merging the worlds of photonics and space technologies."

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Notes to editors

1. Gooch & Housego is a photonics technology business headquartered in Ilminster, Somerset, UK with operations in the USA and Europe. A world leader in its field, the company researches, designs, engineers and manufactures advanced photonic systems, components and instrumentation for applications in the Aerospace & Defence, Industrial, Life Sciences and Scientific Research sectors. World leading design, development and manufacturing expertise is offered across a broad range of complementary technologies.

2. All financial information included in this announcement is sourced from unaudited management accounts and excludes any specific items. This announcement contains certain forward-looking statements that are based on management's current expectations or beliefs as well as assumptions about future events. These are subject to risk factors associated with, amongst other things, the economic and business circumstances occurring from time to time in the countries and sectors in which G&H operates. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a wide range of variables which could cause actual results, and G&H's plans and objectives, to differ materially from those currently anticipated or implied in the forward-looking statements. Investors should not place undue reliance on any such statements. Nothing in this announcement should be construed as a profit forecast.