

Press release

GE Healthcare's 'SIGNA PET/MR 3.0T' offers clinical benefits as the next generation integrated imaging diagnosis device

- Presented **clinical and operational benefits** through SIGNA PET/MR 3.0T, a cutting edge integrated diagnostic imaging device that combines PET and MR
- World's first **time-of-flight capable** PET/MR enabled by **digital detector technology(SiPM)**, with the reduction in radiation dose to patient
- Based on **QuantWorks**, a data quantification technology, and **HyperWorks**, a speed scanning tool, improved diagnostic accuracy and diagnosis speed
- Enhanced scanning efficiency with continuous operation based on a real time PET **detector cooling system**
- Expected to expand in diagnosis and treatment monitoring in lung cancer, **breast cancer, liver cancer, prostate cancer, pancreas cancer as well as neuro including dementia**

Seoul, May 30th, 2017 - GE Healthcare Korea (President/CEO Sia Moussavi) presented ways to simultaneously improve clinical and operational benefits with the SIGNA™ PET/MR 3.0T, a next generation integrated imaging diagnosis device that combines MR and PET.

SIGNA PET/MR 3.0T, an integrated imaging diagnosis device, acquires MR and PET images simultaneously, saving time on diagnostics to patients. Especially in cases of cancer, cardiac diseases, and neurologic diseases including Alzheimer's, that need composite diagnostics with multiple imaging devices, the efficiency can be maximized. The SIGNA PET/MR features GE's new, exclusive MR-compatible silicon photomultiplier detector (SiPM) technology. This new digital detector is characterized by its enhanced sensitivity; it is **up to three times more sensitive than conventional PET technology**. It also features fast coincidence timing resolution enabling TOF reconstruction. With TOF reconstruction, the arrival times of each coincident pair of photons are more precisely detected, and the time difference between them is used to suppress the noise in the images TOF leads to improved PET image quality with higher structural detail and improved signal-to-noise ratio.

'QuantWorks', a data quantification technology and a new speed scanning tool 'Hyperworks' were applied to SIGNA PET/MR 3.0T. Standardized quantified data can reduce errors from difference in image reading capabilities and help improve diagnostic accuracy. Moreover, GE's exclusive silicon photomultiplier detector technology resolved the problem of PET detectors degrading the MR function, common in most integrated devices. The SIGNA PET/MR 3.0T also allows MR diagnosis to be implemented **8 times faster than the conventional MR diagnosis** with Compressed Sensing, a new image acquisition algorithm.

GE's cutting edge PET/MR technology is expected to not only offer clinical benefits but in terms of increasing operational efficiencies. SIGNA PET/MR 3.0T, equipped with an auto cooling system, is **capable of continuous filming without downtime**. High speed, yet stable imaging will be made possible using the method of conducting real-time monitoring of temperatures and operating the cooling system as per the monitoring result.

Dr. Gustav von Schulthess from University of Zurich, a renowned Radiologist and NM physician and expert on hybrid imaging with PET/CT and PET/MR, highly appreciates the clinical benefits of this next generation diagnostic device, saying, "An integrated diagnosis device that simultaneously carries out processes that used to be conducted individually while also providing high quality images offers various benefits to the patients and the medical team on site. After implementing GE's SIGNA PET/MR

3.0T, **radiation exposure of patients has been further decreased considerably** and imaging studies can be generated in a “**one-stop-shop mode**” which help to make fast and precise diagnoses.”

The President and CEO of GE Healthcare Korea, Sia Moussavi, said, “For 120 years, GE Healthcare has been leading the advancement of diagnostic imaging devices. We are now striving to improve clinical, economical, and operational benefits for our customers by developing integrated diagnosis technologies. I expect SIGNA PET/MR 3.0T technology will add great value and benefit to healthcare system in Korea to advance patient care quality and outcomes.”

###