1. No.
   2019G007

2. Title
   Development of Artificial Intelligence for Ultra-Low-Dose CT Screening and Pulmonary Nodule Differentiation in Smokers

3. Period
   2019-2021

4. Summary
   According to this research theme, computer-aided volumetry (CADv) with convolutional neural network (CNN) had been developed and determined the utility for differentiating malignant from benign nodules as compared with CADv without CNN by total nodule volume change/day and doubling time during 2019 and 2020. In 2021, deep learning reconstruction (DLR) was developed and compared the potential for radiation dose reduction on ultra-high-resolution CT and area-detector CT with hybrid-type and model-based iterative reconstructions (IRs). Although DLR was inferior to others for radiation dose reduction at some scan modes on UHR-CT, all methods had similar potential on ADCT and UHR-CT with normal mode in this setting.