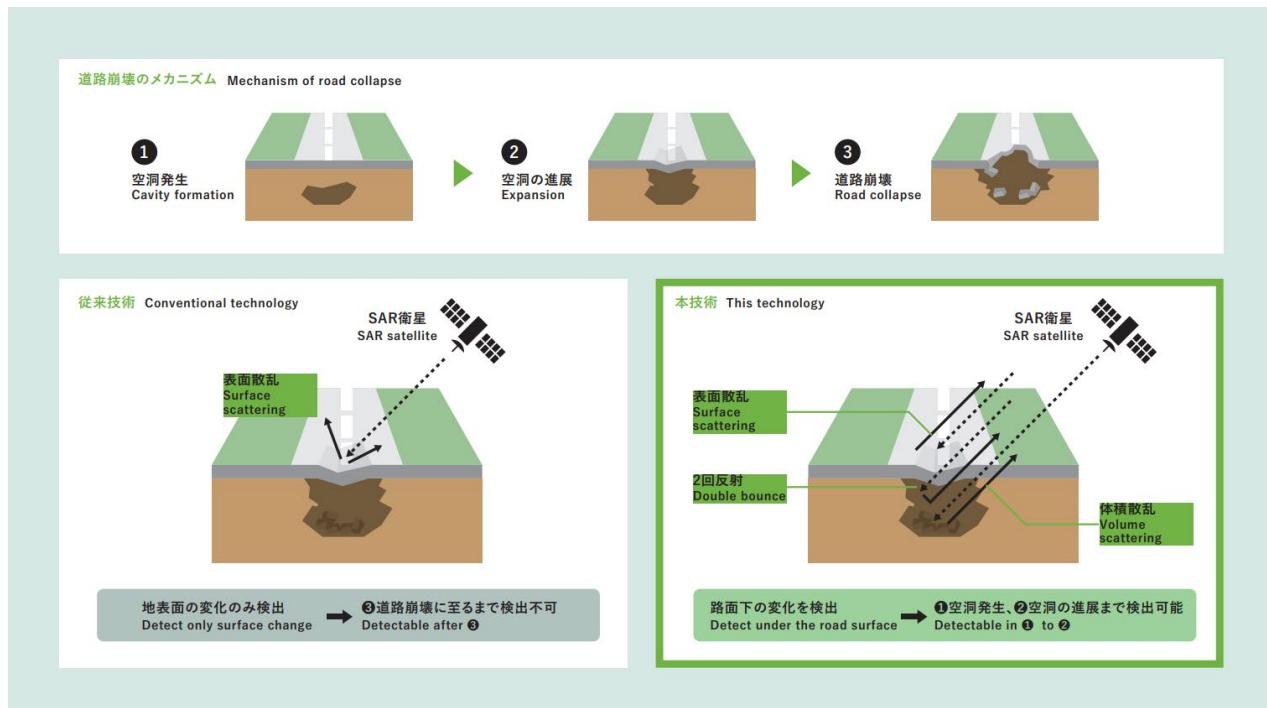


## We efficiently investigate the conditions under roads, over wide area using satellites Underground structure inspection technology by using satellites

### Background and Technical Challenges

On-site inspections are being carried out both on road surfaces and within underground pipelines. However, there are about 115 million km of sewer and water pipelines, so it is difficult to inspect periodically because of cost.



### R&D Goals and Outcomes

Because of the deterioration in social infrastructure, leaks of water pipelines and road cave-ins become social problems. By using satellites, we can drastically improve the efficiency of maintenance and management and enable sustainable operation of social infrastructure

### Key Technologies

#### 01 Core Technologies

- Synthetic Aperture Radar (SAR) satellites catch scattering characteristic from road.
- By Using radio waves that incidence and reflect by several angles, it is possible to detect road change.

#### 02 Key Differentiators

Conventional technology predicts road cave-ins indirectly by combining several types of data. However, this technology can detect the signs of cave-ins directly by sending and receiving radio wave information to and from the satellite.

**Use Cases** Public Services & Local Government  
Aerospace & Defense

**R&D phase** Research

**Technology Schedule** FY25-26

**Commercialization Schedule** FY27-29

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