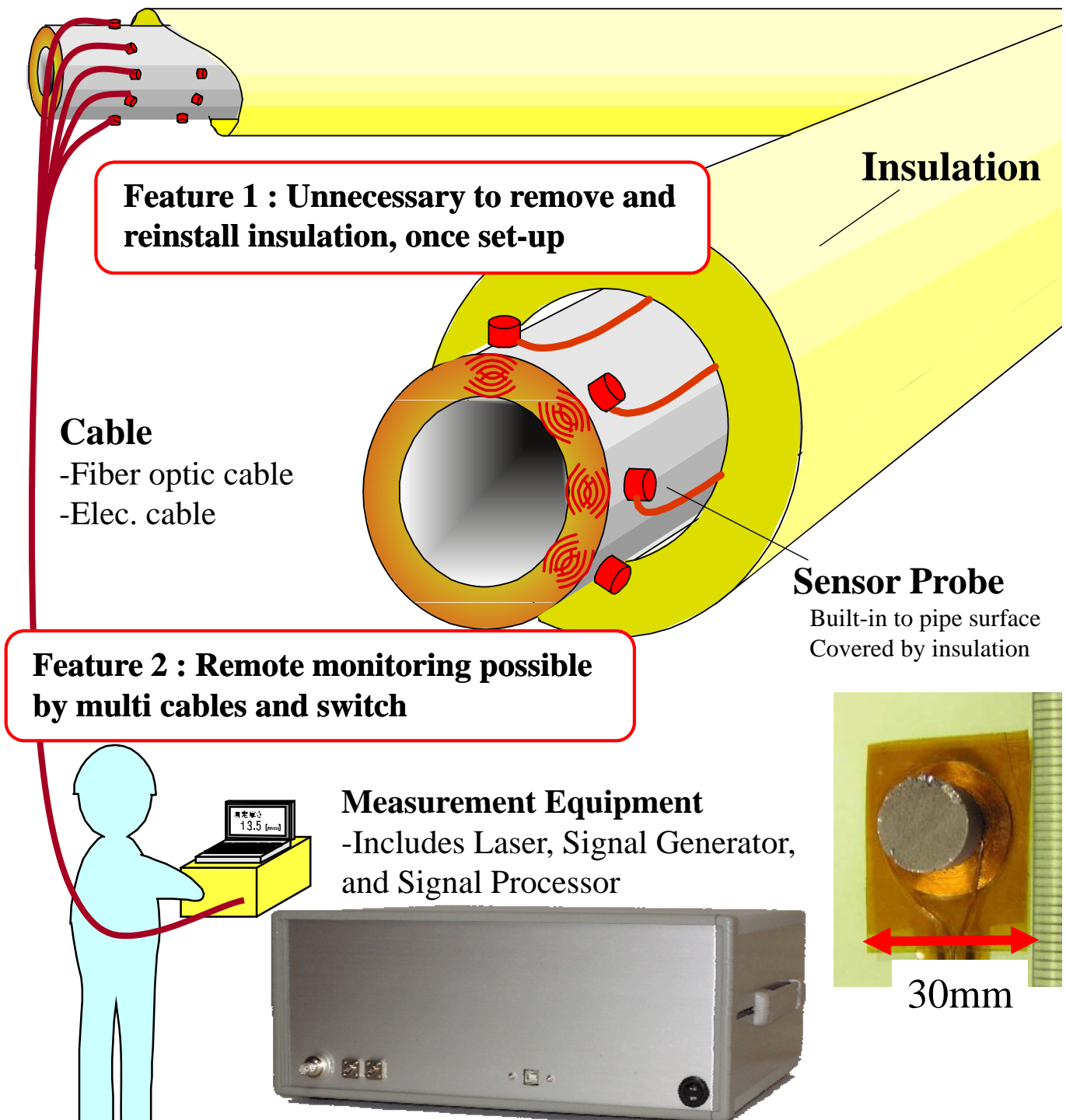
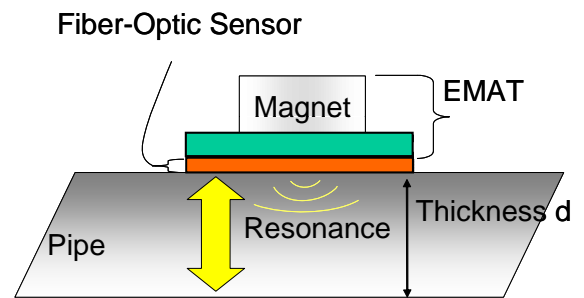
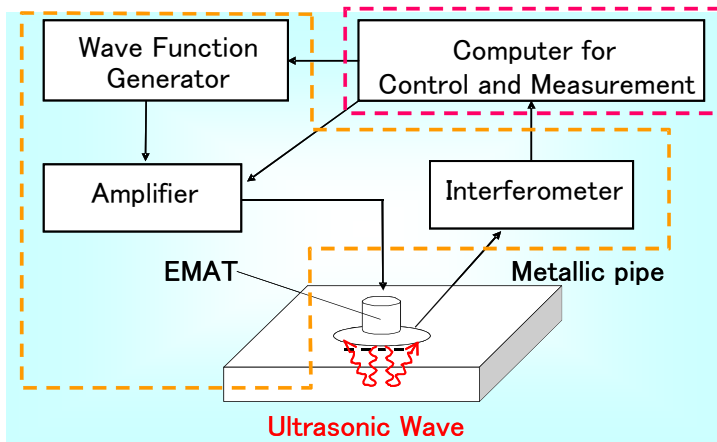
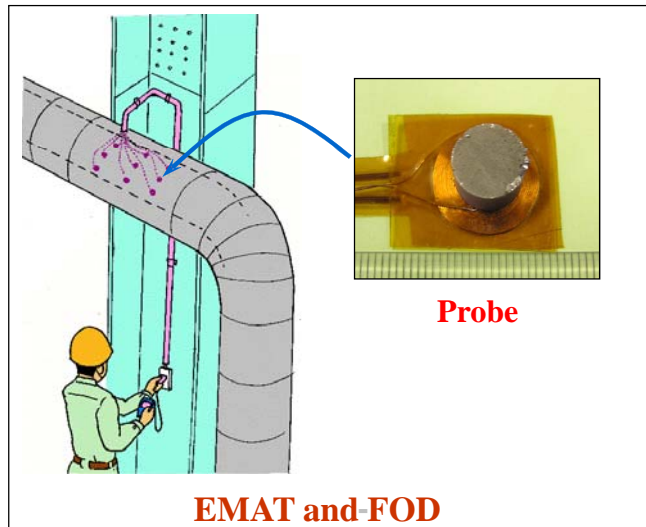
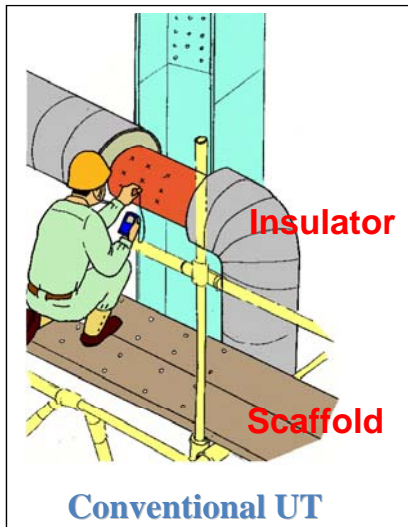


Pipe-wall Thickness Measurement System

EMAT^(*1) and Fiber-optic Doppler Sensor^(*2) enabling a Long Period Monitoring Erosion and FAC^(*3) On-line-monitored at Temperature up to 200 deg. C
JSME^(*4) Codes (JSME S TB1-2009) for pipe thickness management



*1 EMAT : Electro Magnetic Acoustic Transducer, *2 FOD : Fiber-optic Doppler Sensor, *3 : FAC : Flow Accelerated Corrosion, *4 JSME : The Japan Society of Mechanical Engineers



$$f_r = \frac{N \cdot v}{2d} \dots (1)$$

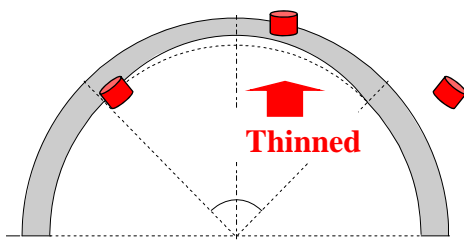
f_r : Resonant Frequency (kHz)

N : Integer

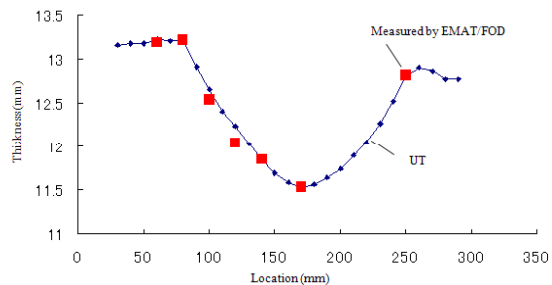
v : Sonic Speed (m/s)

d : Thickness (mm)

* UT: Ultrasonic Testing



200A, original thickness 13mm



【Benefit】

- Long-term monitoring for a fixed point
- Sensor built in to piping and covered by insulation
- Any time measurable without removing insulation
- On stream inspection possible

Material	Carbon Steel, Stainless Steel
Thickness Range	5~40 mm
Accuracy	± 0.1mm (equal to UT)
Temperature	0°C~200°C (Pipe surface)