

Developing US-Japanese partnerships



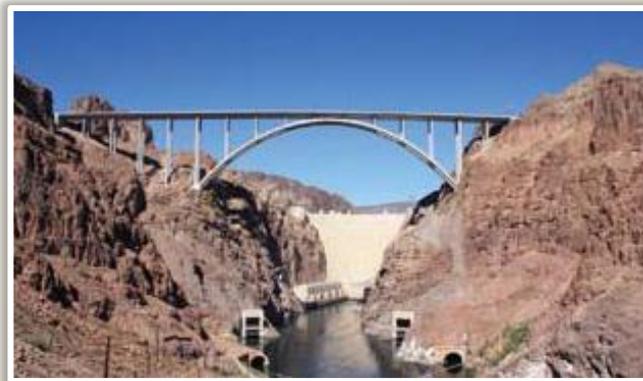
OBAYASHI

Obayashi Corporation

- ◆ One of Japan's largest general contractors
- ◆ 120-year history
- ◆ the first Japanese construction company to win a public civil engineering contract on the U.S. mainland (1979)



Tokyo Sky Tree®



Colorado River Bridge at Hoover Dam (2010)



Golden Gate Bridge Seismic Retrofit (2008)



New Orleans Hurricane & Storm Damage Reduction (2011)



Transbay Transit Center, SFO (~2017)

AMEC



- In June, 2011, AMEC, a UK company acquired US company MACTEC, head office Alpharetta, GA, USA.
- In Aug. 2011, Obayashi entered into a Teaming Agreement with AMEC Environment & Infrastructure for application of **Orion ScanSort** and **Orion ScanPlot** technology in Japan.
- In Sep. 2012, AMEC Asia KK was founded in Tokyo.

CANBERRA



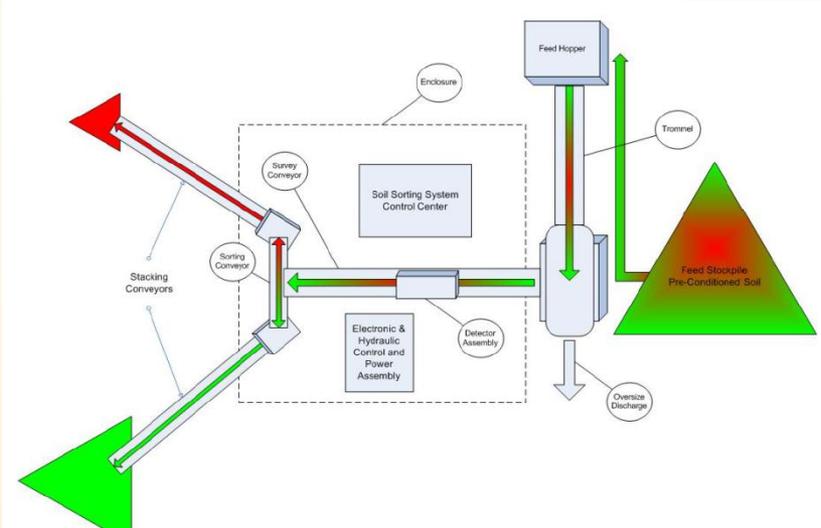
- Head office in Connecticut
- AREVA group
- Specialized in radiation measurement
- In 2002, CANBERRA Japan was founded.

Soil sorting technology

ORION ScanSort

ORION ScanSort

Accurately segregates radioactive from compliant materials



History



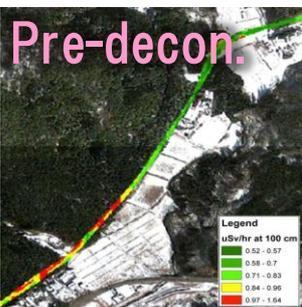
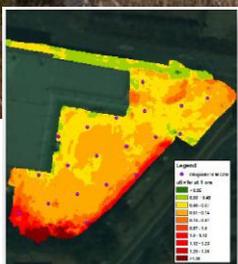
Results: Very accurate sorting
High production rate (200 ton/h)
Suitable for sorting agricultural, soil and concrete debris



Collaborative development

ORION ScanPlot

Demonstration



Development

● New platform

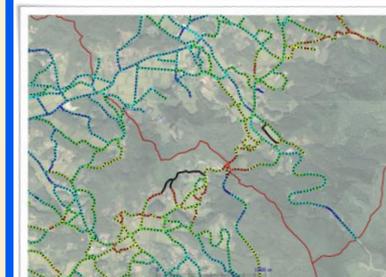


● New control system



Adoption

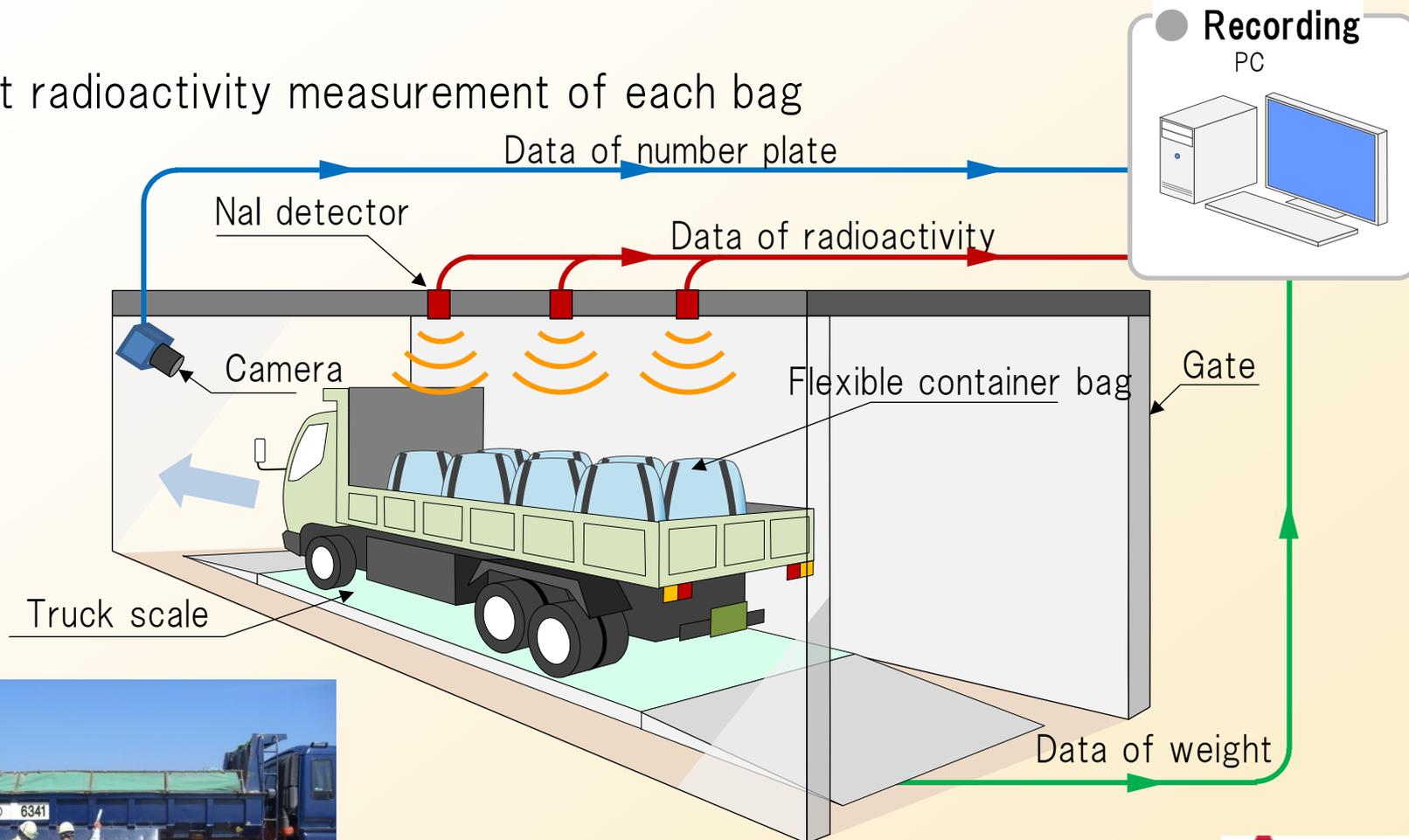
● Ichinoseki city road



Collaborative development

OBYASHI TRUCK SCAN

Fast radioactivity measurement of each bag



Traditional method



OBUYASHI TRUCK SCAN

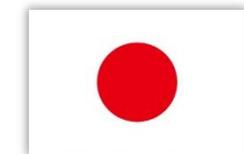


- Requirements
- Specification
- Equipment Design
- Test

- Sensor design
- Sensor fabrication
- Base Software development



- Modification of software
- Measurement



- Business culture
- More time spent planning than in execution
- Waste conditions and Interim Waste Facility design specifications
- Different regulations and standards
- Import requirements
- Demonstrating capabilities of US technologies to key Japanese organizations (opportunities, budget)
- Communication (language)

- US company provided key electronic sensors, software packages, and technical expertise.
- Obayashi provided Japanese regulation compliant delivery system, electronics packages, local personnel, technical expertise, and resources.
- Trusting relationship developed through closely working together and overcoming challenges.