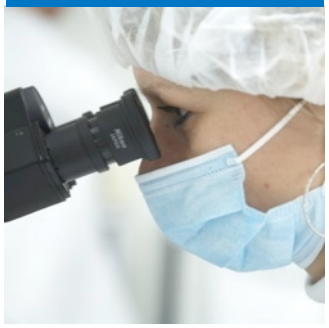

Technologies SRI International Can Offer

Fukushima Recovery Forum

Dr. Takao Kobayashi

Senior Scientist, SRI International

February 18th and 19th, 2014

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SRI International - Overview

SRI headquarters, Menlo Park, CA

Sarnoff, Princeton, NJ

- Founded by Stanford University in 1946
  - Based in Silicon Valley
  - Non-profit corporation
  - Independent in 1970
- 2,100 staff members
  - Nearly 50% with advanced degrees
  - More than 20 locations worldwide
- Consolidated 2013 revenue ~$530M

SRI Harrisonburg, Virginia

SRI State College, Pennsylvania

SRI Tokyo, Japan

SRI Washington, D.C.

SRI St. Petersburg, Florida

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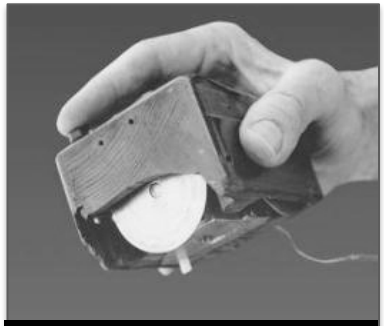
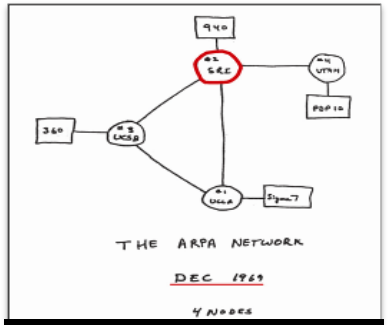
Society uses Multiple SRI Innovations Every Day



Computer Mouse

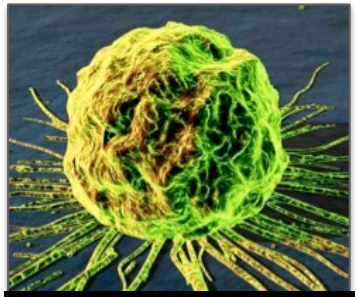


1st ARPA-Net Message

Natural Language Platform

Surgical Robotics

Color Film Reproduction

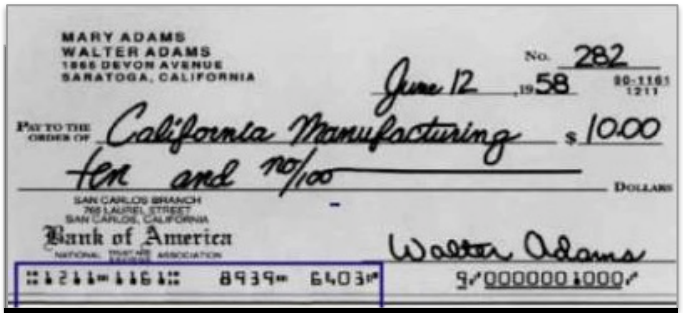


Cancer Drugs

Low-Cost Silicon

Address Reading

Artificial Muscle



Electronic Banking

Virtual Personal Assistants

High Definition Television

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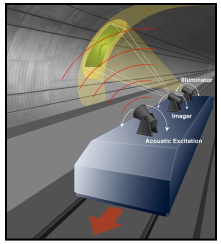
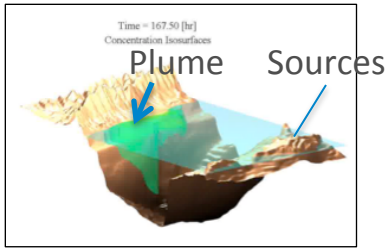
Technologies SRI Can Offer for Fukushima

1. Remote Structural Integrity Inspection



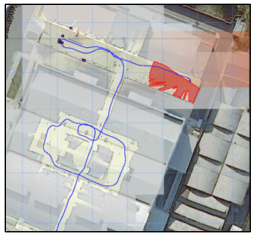
Vibration Imaging

2. Radiation Leak Source Detection



Inverse Transport Modeling

3. Advanced Robotic Task Coordination



KARTO Software

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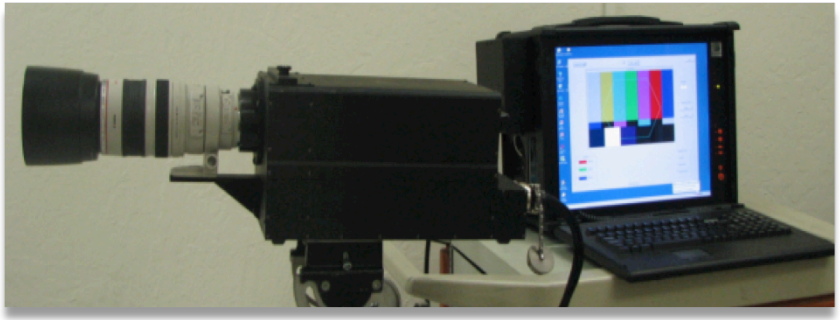
Vibration Imaging Systems for Structural Integrity Evaluation

- Camera device that can reveal damages in structure and components
- Non-contact & remote sensing capabilities
  - Eliminate need to mount sensors
- Can detect damages at an early stage to prevent catastrophic failures



Key Features

- Versatile lens magnification
- Remote non-contact inspections
- Resolution of 1 μ-radian

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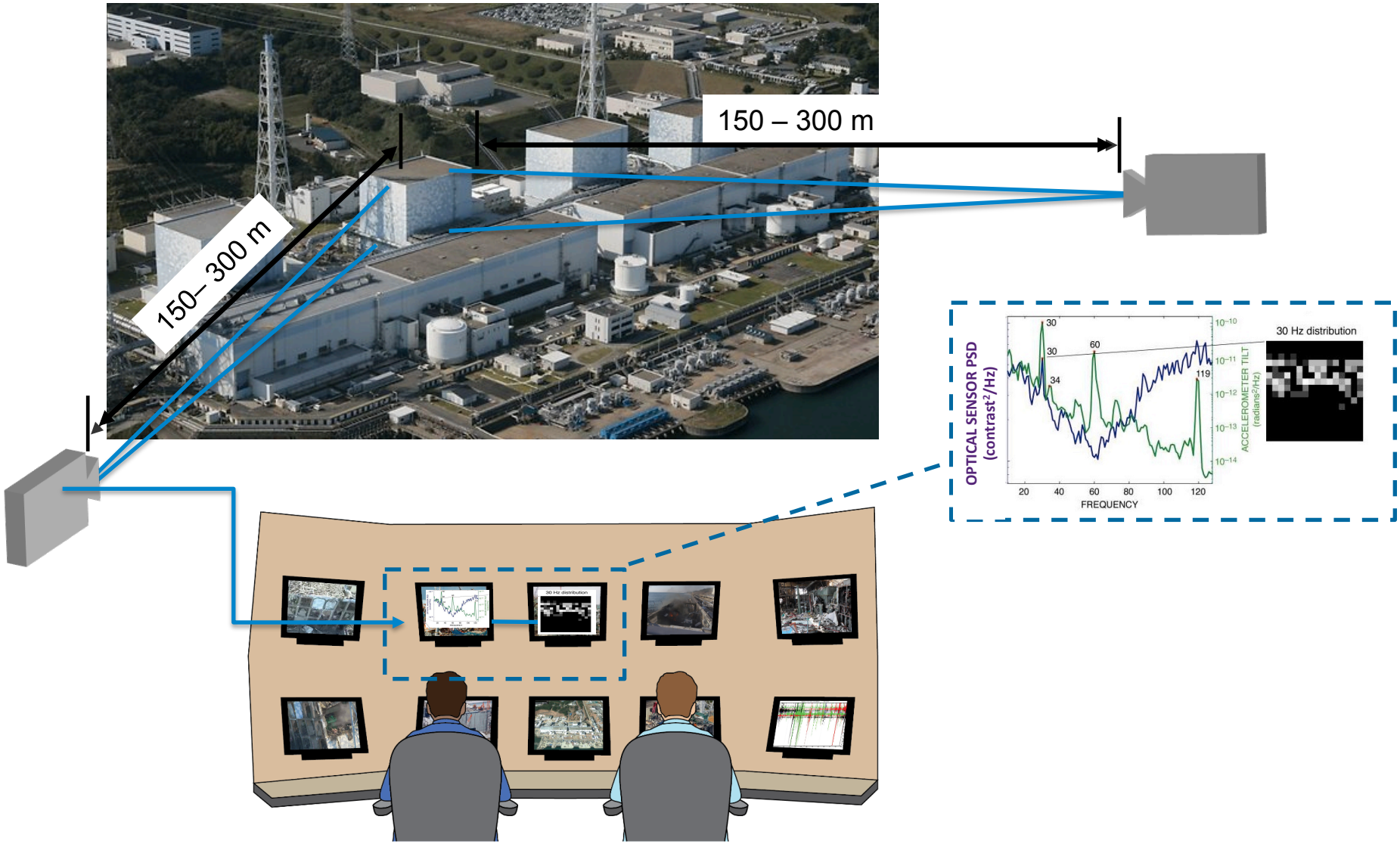
VIS for Fukushima



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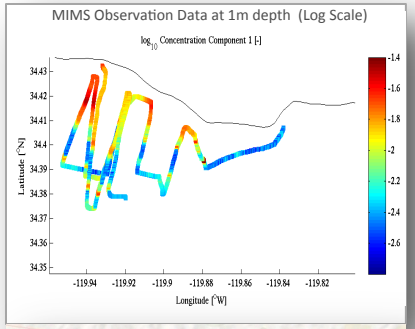
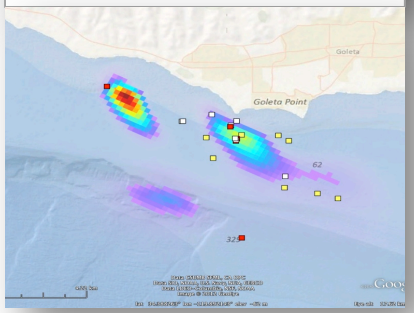
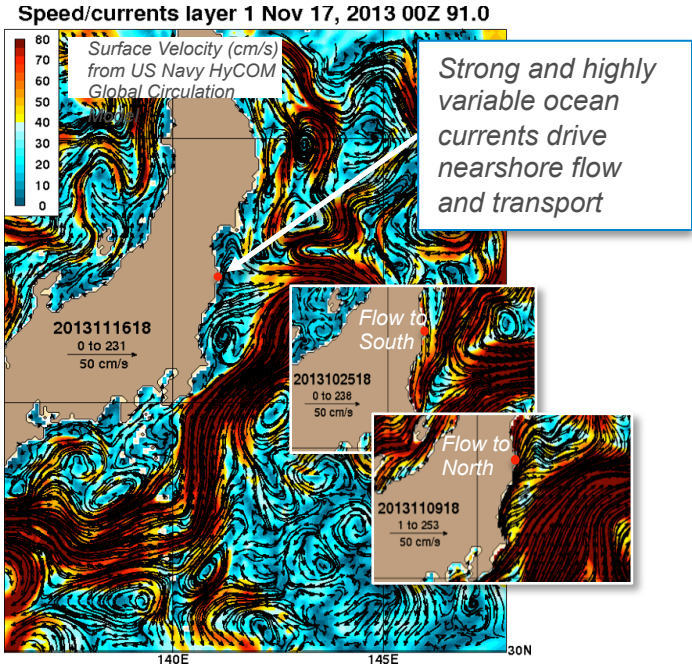
Inverse Transport Modeling for Radiation Leak Source and Spread

- Modeling Algorithm locates the source of and path taken by contaminates
- Proven effective in strong currents that defy traditional modeling methods
- Proven effective with limited and arbitrary sampling data
  - Requires no prior knowledge of sea floor
  - Can combine multi-day data for improved accuracy and robustness

SRI Membrane Introduction Mass Spectrometer (MIMS)







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KARTO Software Facilitates Multiple Robots Working Together

- Allows Robots to cooperate in navigation, mapping, exploration, and task completion in difficult environments
- Software solution allows interactivity among customized robotic platforms

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