

Success Stories
in Academia/Government/Industry
Partnerships

Jim "Oz" Osborn
Pittsburgh Robotics Initiative

Houdini



Development coordinated with Tanks Focus Area and Robotics Cross-Cutting Program

- concept proven in ORNL robotics lab
- 2 units deployed for waste retrieval in Gunite and Associated Tanks at ORNL (1998-2000)
- electric version for decontamination of hot cell at Quehanna, PA, site (2000-01)
- design basis for machine target at D&D in Russian nuclear cities (2001+)



Partners:

- *Carnegie Mellon University*
- *DOE EM (D&D Focus Area)*
- *National Energy Technology Laboratory*
- *Oak Ridge National Laboratory*
- *RedZone Robotics*

Rosie



Development coordinated with D&D Focus Area and Robotics Cross-Cutting Program

- concept proven in ORNL robotics lab
- Rosie-C deployed at Argonne National Lab for decommissioning of CP-5 reactor (1997-98)
- and
- deployed at K-25 for dismantlement & size reduction (2000+)

Partners:

- *Argonne National Laboratory*
- *Carnegie Mellon University*
- *DOE EM (D&D Focus Area)*
- *National Energy Technology Laboratory*
- *Oak Ridge National Laboratory*
- *Providence Group*
- *RedZone Robotics*

Pioneer



Developed through collaboration of DOE, NASA, academia and industry

- delivered to Chernobyl Unit-4 and local operators trained (1999)
- to be deployed by Chernobyl Nuclear Power Plant Emergency Management Center (2000+)
- expected to participate in decommissioning of Units 1-3 (2001+)

Partners:

- *ChNPP (Ukraine)*
- *Carnegie Mellon University*
- *DOE NE*
- *DOE NN*
- *ISTC (Ukraine)*
- *Jet Propulsion Laboratory*
- *Lawrence Livermore National Laboratory*
- *NASA HQ*
- *NASA Ames Research Center*
- *Oak Ridge National Laboratory*
- *Pacific Northwest National Laboratory*
- *RedZone Robotics*
- *University of Iowa*
- *US Department of State*
- *Westinghouse*

Underground Coal Mining Automation

Developed and being evaluated through collaboration of government, academia, equipment manufacturer and end users.

- positioning and guidance system for continuous mining machine developed (1997-99)
- testing and evaluation in an operating coal mine to quantify productivity, quality, and safety improvements (2000-01)
- commercialization pending positive results

Partners:

- *Consolidated Coal*
- *Idaho National Engineering and Environmental Laboratory*
- *Joy Mining*
- *NASA*
- *National Robotics Engineering Consortium*
- *National Energy Technology Laboratory*



Lessons Learned

Genuine participation is essential

- Each team member has to bring something to the table
- Each team member has to have a vested interest – in success
- Everyone must understand and appreciate each others' stake

Government plays a key role

- Always provides guidance and perspective
- Usually provides technology
- Often best positioned to make the investment

Collaborative development is by far the most effective tech transfer mechanism