



SUCCESS



**SGS IS THE
WORLD'S
LEADING
INSPECTION,
VERIFICATION,
TESTING AND
CERTIFICATION
COMPANY**

INNOVATION – SGS GROWTH

- **SGS FOCUSED ON INNOVATION**
 - ANALYSIS
 - AUTOMATION
 - IMPROVEMENT
 - SIMPLIFICATION

INNOVATION – SGS GROWTH

- INNOVATION IS OFTEN THE TRANSFER OF TECHNOLOGY ACROSS APPLICATION LINES

INNOVATION – SGS GROWTH

- CAN AUTONOMOUS UNMANNED SYSTEMS PROVIDE ANY SOLUTIONS TO IMPROVE ENVIRONMENT, HEALTH AND SAFETY EFFORTS

AUTONOMOUS UNMANNED SYSTEMS FOR EHS APPLICATIONS

- The Technology – The Source – DOD
- The Keys to Autonomous Behavior
 - Location
 - Behaviors
- Major Safety Concerns – Incidents
- Application of the Tech

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MAJOR SAFETY CONCERNS/WHAT CAN WE IMPROVE – CAN AUTONOMOUS UNMANNED DEVICES HELP

- Awareness
- Training
- Communication
- Documentation
- Proper Equipment
- Supervision
- Innovation
- Transparency

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APPLICATION OF THE TECH

■ Instrument Systems

- Expensive for Multiple Locations
 - One System that moves autonomously

■ Heavy Load

- Location
- Behaviors

■ Collision Avoidance

■ Marauder's Map

■ Instrument Systems

- Expensive for Multiple Locations
 - One System that moves autonomously

- Monitor perimeter - 7 PPT Benzene
 - Switch TD tubes every 14 days
 - Small plant – 25 sites
 - Large Plant – 60+

- The Solution – Need Instrument
 - One to Several Autonomous vehicles
 - Reads Wind Direction and marches down wind
 - Near Realtime

- Advantages
 - Instant Notification
 - Source Determination
 - Will Save money

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APPLICATION OF THE TECH

■ Heavy Load

- Problem
 - Carrying equipment around the site or building
 - No means of automation of process because of mobility
- Solution
 - Lighten the Load by providing a means of carrying equipment -
 - Ability to bring advanced equipment with you automate or redistribute work load
 - Provide Automated Solution now easily transportable
- Advantages
 - Improve effectiveness by reducing lifting
 - Increase productivity/person
 - More reliable results through automation

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APPLICATION OF THE TECH

■ Collision Avoidance

- Problem
 - Equipment and Vehicles in Plant incidents
- Solution
 - Positioning system driving collision avoidance
 - Reduction of human error through autonomy
- Advantages
 - Reduce Incidents with moving equipment
 - Increase productivity/person

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MORE INFORMATION

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