



WORLD CLASS HEALTH & SAFETY EVENT

Michigan Safety Conference

AI in Safety: The Good, The Bad, & The Ugly

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Session code: 9A99



94 Years - Find Your Safety _____!



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Agenda

- **AI and IoT described**
- **Safety & AI interface**
- **IoT**
- **Safety AI & IoT use cases**
- **Preparation for AI integration: The good, the bad, the ugly**



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Internet of Things

- Connecting physical devices to the internet for the purpose of data collection
- Examples in daily life: smart thermostats, fitness devices, doorbell cameras, smart speakers...
- Examples in safety: proximity sensors, connected gas sensors, smart helmets, GPS on equipment...

We could say the IoT serves as the eyes and ears for Artificial Intelligence





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AI: What & Why Now?

- Focuses on interpreting data
- Model Progression – Continuous improvements in reasoning models open the door to higher-level knowledge tasks.
- Vertical Agents – Purpose-built for a specific field or industry, with enhancements that surpass general foundation model features.
- Reduced Costs – via Open-Source Models – a win for all AI adopters.

What is Artificial Intelligence?

Technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy.





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AI Examples in every day life

- Computer vision: facial recognition, google translate, self-driving cars.
- Machine learning: spam filters on email, Netflix recommendations
- NLP: Alexa, Siri, translation apps, ai notetakers
- Predictive analytics: Waze, healthcare disease detection, PM
- Robotics: surgical applications, grocers for stocking shelves and fulfilling orders

AI Examples in workplace safety

- Computer vision: PPE checks, pedestrian / forktruck interactions, drones
- Machine learning: preventative maintenance, help identify large sets of risk and suggest
- NLP: creating content for training, regulatory queries, analyze reports & create summary
- Predictive analytics: risk assessments, injury data analysis, gap analyses, risk predictions
- Robotics: welding, material handling, loading & unloading



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Deeper look: AI in Safety

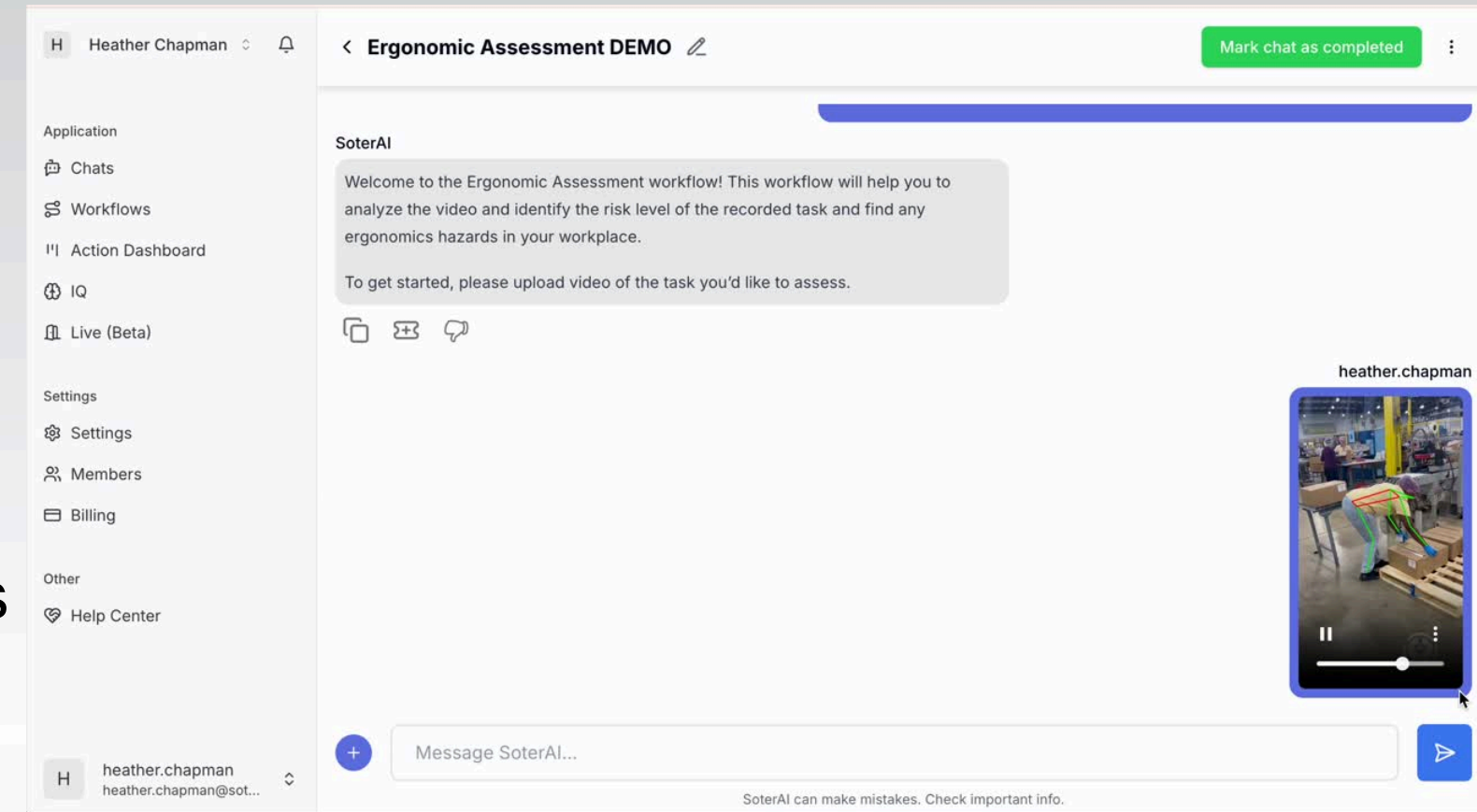


Computer vision
+
Machine learning



NLP

+
Predictive analytics







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Predictive analytics

- Transform historical data into bit-size actionable insights
- Uses statistical models to make predictions
- What used to take an hour or more is now done in seconds

| < Injury Data Analysis DEMO  | | Mark chat as completed  | |
|---|---------------------|--|--|
| • | 160 - BRUISE/CONTU: | 658 | |
| • | 170 - CUTS: | 315 | |
| • | 260 - INFLAMATION: | 117 | |
| • | 999 - NOT DETER.: | 62 | |
| • | 235 - FOREIGN BODY: | 59 | |
| • | 175 - PUNCTURE: | 59 | |
| • | 210 - FRACTURE: | 58 | |
| • | 165 - CRUSH INJURY: | 33 | |
| • | 602 - DIZZY/FAINT: | 33 | |
| • | 400 - MULTIPLE: | 32 | |
| • | 250 - HERNIA: | 29 | |
| • | 140 - CONCUSSION: | 21 | |
| • | 000 - UNDEFINED: | 16 | |
| • | 700 - CUMTV TRAUMA: | 15 | |
| • | 120 - BURNS: | 14 | |
| • | 445 - MENTAL/EMOTL: | 14 | |
| • | 190 - DISLOCATION: | 13 | |
| • | 420 - HEART ATTACK: | 8 | |
| • | 176 - AML/INS BITE: | 5 | |

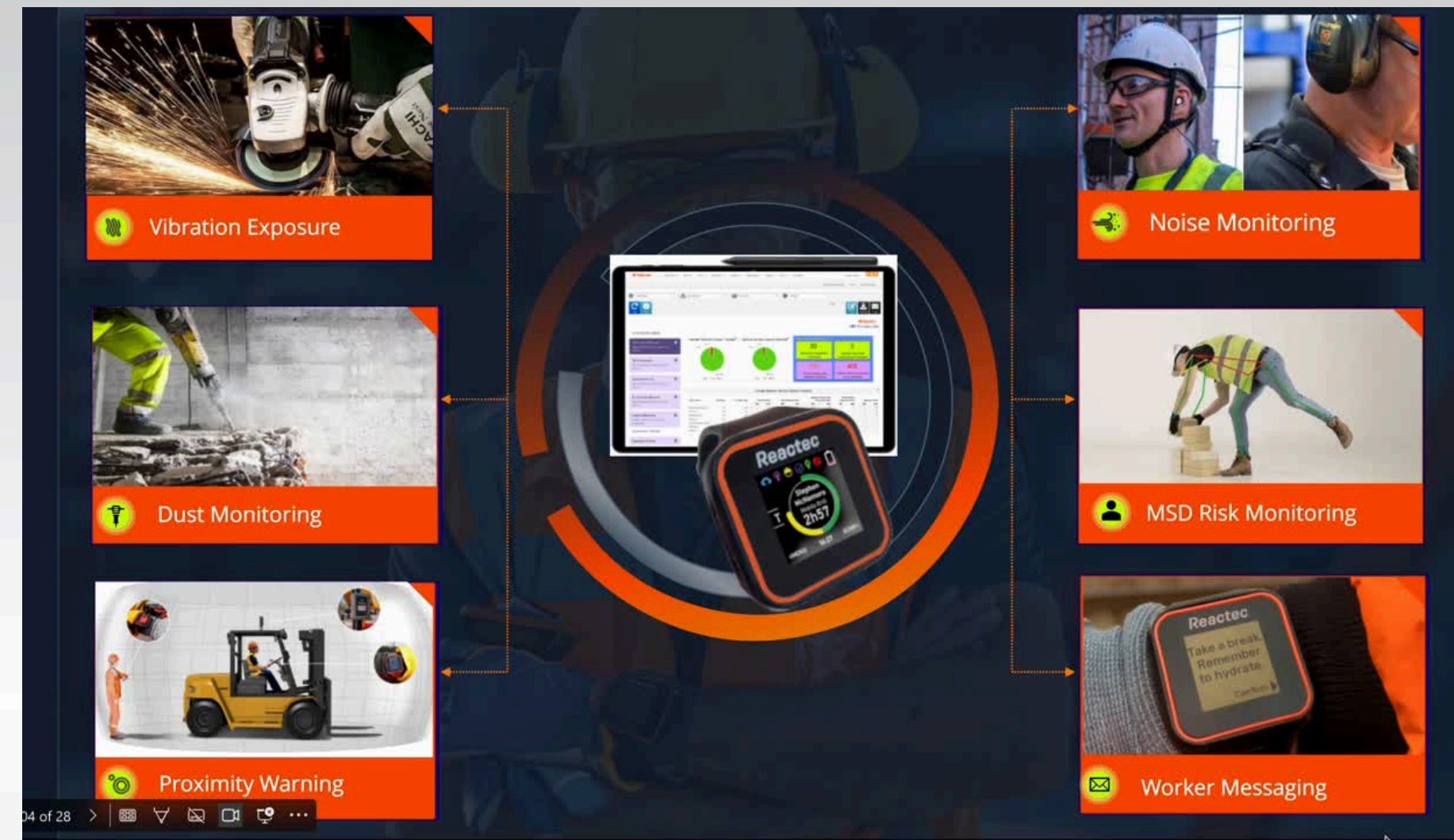


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Reactec: HAV, Noise, Dust, Proximity [IoT]

- Connects you to worker exposure
- Sends alerts to worker
- Collects data and feeds to dashboard
- Generates hot spot maps
- Provides summary of overall worker risk



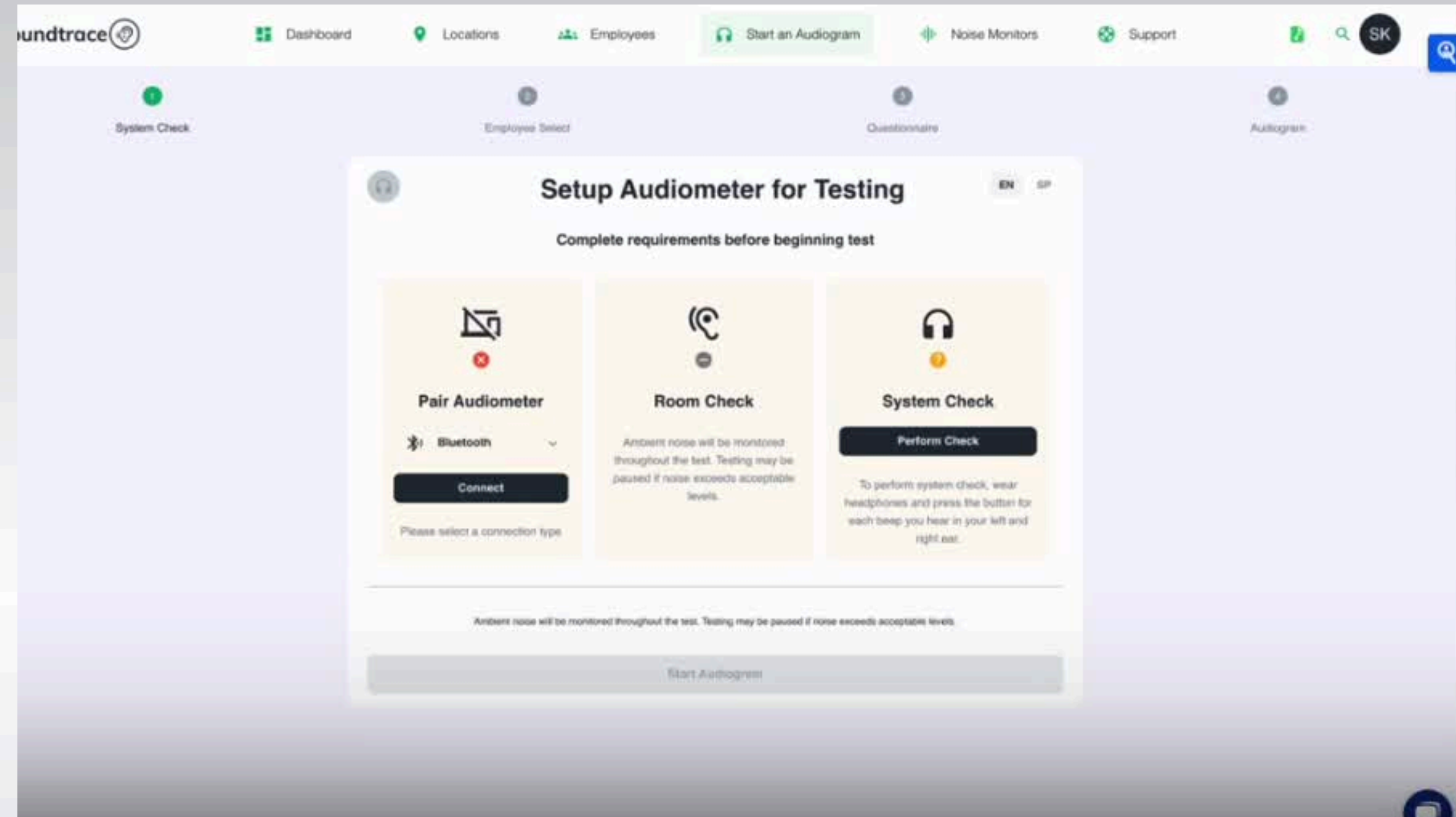


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Soundtrace: Audiograms [IoT]

- Noise monitoring
- Audiograms
- Recordkeeping
- Training
- Cloud-based







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SoterAI: Hazard Identification & Regulatory Compliance

- Default OSHA code violations
 - Get CFR
 - Get penalty links
 - Get plain english summary
- Select any other regulation to assess against
- Discuss potential solutions and costs
- Prepare corrective action plan

< OSHA Hazard Identification 




Mark chat as completed 

heather.chapman




SoterAI

Thank you! The final step is to provide any additional context that could help improve my review. Is there any additional context that can help the analysis?

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the liquid being dispense is methyl acetate. the forktruck in the area was not rated for flammable atmospheres. the drum was not bonded during dispensing. the emp not wearing a respirator 





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SoterAI: Ergonomics

- REBA
- Hazard + Risk + Control
- Treat this as your problem solver!
- Identify detailed control options
- Suggested ROI
- Build task-specific RTW plans based on common restrictions

< Ergonomic Assessment Workflow 




Mark chat as completed 

Hey, SoterAI! I would like to start Ergonomic Assessment: Company-specific Review.

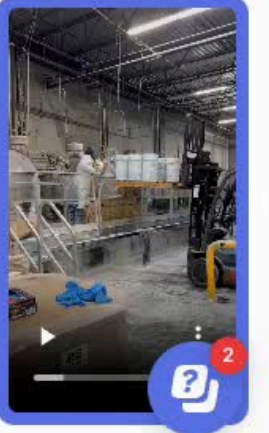
SoterAI

Welcome to the Ergonomic Assessment workflow! This workflow will help you to analyze the video and identify the risk level of the recorded task and find any ergonomics hazards in your workplace.

To get started, please upload video of the task you'd like to assess.

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Soter: Policy Review

- Upload existing policy
- Compare against any regulation or consensus standard you want
- Deliverable is a gap analysis
- BUT, you can ask for best practices to take your policy to the next level

< OSHA Policy Review

Mark chat as completed

recommended content improvements

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Overview of Key Findings

Overall, Company C's Safety & Health Manual covers many foundational requirements, but several elements required by MIOSHA's Hazard Communication (HCS / "Right To Know") provisions [29 CFR 1910.1200](#) and parallel Michigan rules [e.g., MCL 408.1014a et seq.](#) are either missing or need clarification. Below are major gaps and concise improvement suggestions.

Identified Compliance Gaps

1. Hazard Communication Labels and Piping
 - Current policy does not clearly outline a GHS-aligned container labeling system or address unlabeled pipes (required by [29 CFR 1910.1200\(f\)](#)).
2. Employee Right-to-Know and Non-Routine Tasks
 - There is no explicit process for informing employees of chemical hazards for non-routine tasks, nor are there clear statements on their right to obtain SDSs via the state if the employer cannot provide them ([MCL 408.1014b](#)).
3. Posting Notices of New or Revised SDS
 - While SDS management is mentioned, the policy lacks a requirement to post



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Soter: Policy Development

- Provide basic information on operations or exposures & request a policy
- Review draft and then discuss further details to improve upon draft
- Ask for specific sections related to your company's unique needs

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< **Hazard Communication Policy Draft**

Mark chat as completed

1. Who is the intended audience, and do you have any specific compliance or performance goals?

2. Are there particular regulatory requirements (OSHA, local codes, etc.) we need to address?

3. How are these chemicals used in your processes or operations?

4. Who will manage and maintain the policy (e.g., EHS manager, supervisors)?

5. What level of detail and format (formal policy, checklist, etc.) do you prefer?

Please provide your answers, and then I can finalize the document.

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all employees

MIOSHA

methyl acetate is used in closed system dispensing into drums or mixing vessel. Sodium nitrite is powder form and scooped into mixing vessel.

+ Message SoterAl...




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Soter: Toolbox Talks

- Provide your agent with a brief description of what topic you're interested in
- Respond to initial query and give details
- Ask questions!

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< Respirators and Weld Fumes 

Mark chat as completed 


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draft a toolbox talk on respirators and weld fumes. Target audience is welders welding on carbon steel

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To complete your request to generate a toolbox talk on respirators and weld fumes, I have some quick clarifying questions:

1. **Regulations:** Are there specific standards (OSHA, AWS, local, internal) that must be addressed?
2. **Carbon Steel Welding Processes:** Are there any special tasks, procedures, or hazards unique to your carbon steel operations?
3. **Safety Roles:** Who will use this document and do you have a designated safety officer or team?
4. **Level of Detail:** Do you prefer a concise bullet-point format or a more narrative-style guide?

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 2



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The Good: Your work before implementation

Choose AI and integrate effectively

- What is the problem?
 - Do you have inefficient processes?
 - Is data siloed somewhere?
 - Are there safety gaps?
- Define the why
- Get square with your leaders
 - AI will bring forward more hazards & issues being flagged
- Clean your data!
 - Garbage in, garbage out
- Launch on a small scale.
 - Test first! Fail small and then expand
- Make sure IT is your best friend

| SoterAI Implementation Process | |
|---|----|
| SoterAI Implementation Process | 2 |
| 1. AM Handover | 2 |
| 1.1 Account Creation | 2 |
| 1.2 Intro Meeting and Preparation | 2 |
| 2. Onboarding | 3 |
| 2.1 Onboarding Procedure | 3 |
| 2.1.1 Meeting Agenda and Script | 3 |
| 2.1.2 Post Onboarding | 7 |
| 2.2 User Data Monitoring and Action Plan | 7 |
| 2.2.1 Data Monitoring | 7 |
| 2.2.2 Action plan | 8 |
| 2.3 Regular Touchpoints | 9 |
| 3. Ongoing Strategic Reviews | 10 |
| 3.1 Maintain Contact and Collaborate with <u>Soter</u> Colleagues | 10 |
| 3.2 ROI Analysis and Reporting | 10 |
| 4. Long-term Use | 12 |



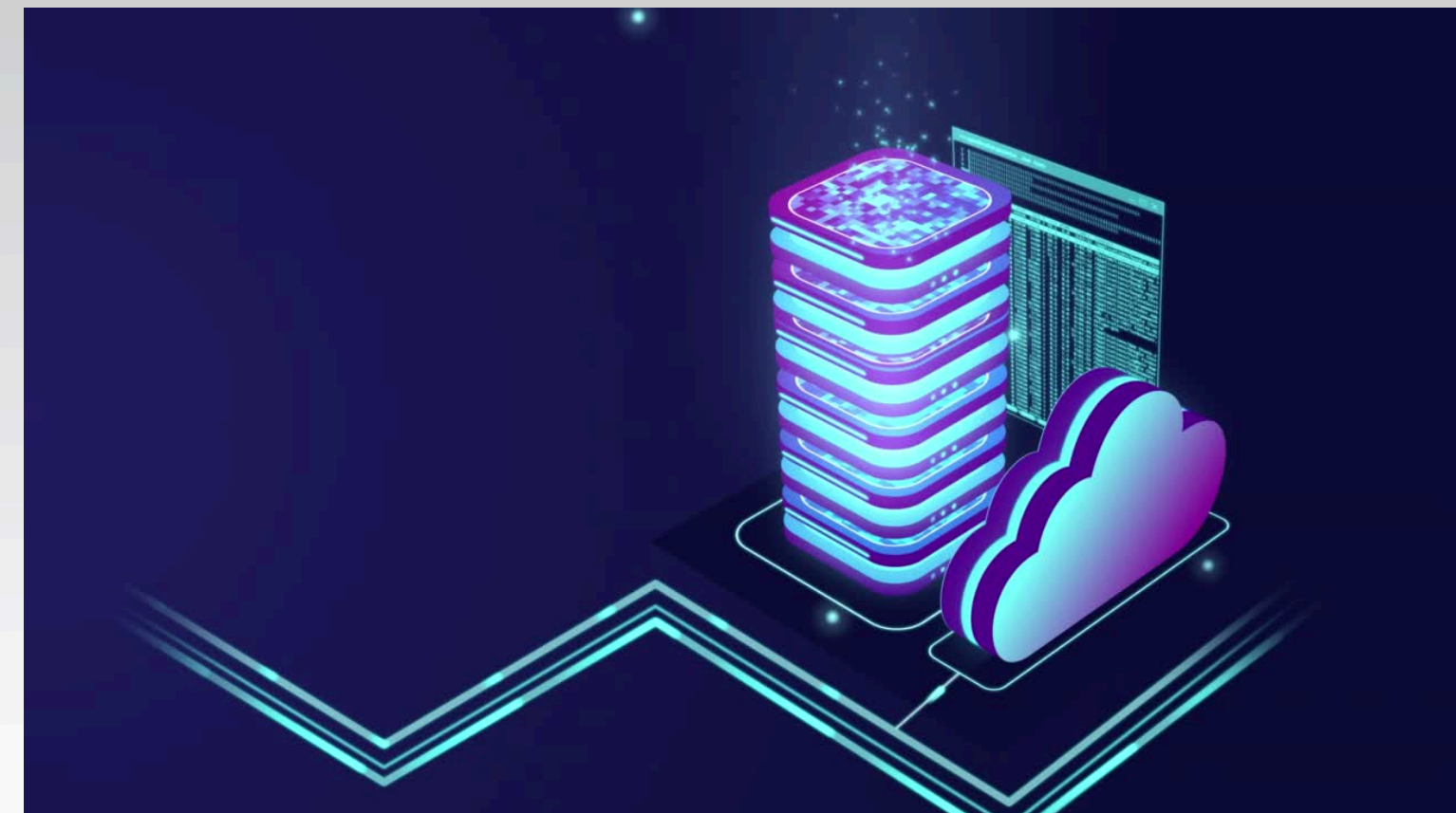
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Potential Challenges When Introducing Technology

The Bad & The Ugly – Evaluate & Understand!

- Strategy – what is success?
- Buy-in – all levels
- LOTS of data – what now?
- Extra work?
- Lack of trust
- Security
- Who owns your data?
- Bias from incomplete data
- Privacy
- Cloud storage
- Cost
- ROI
- Reluctance to change
- Onboarding
- Culture
- Diminished critical thinking



AI is a supplement. It does not replace HI!



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Thank you!!

SOTER

