10th International Conference on the Prevention of Accidents at Work

TS 1.1.1 Digitalisation

Digital manufacturing – challenges for occupational safety and health (OSH) due to digital transformation

Introduction: Hans-Jürgen Bischoff

Presentation: Christian Werner
Special Commission on Prevention of occupational risks – with 14 Sections: www.issa.int/en/communities/tc-ap/about

Specific information on Section Machine and System Safety www.safe-machines-at-work.org

General information about ISSA: https://ww1.issa.int/
ISSA – Section Machine and System Safety

Project Group Digital Manufacturing

Discuss relevant points and give practical examples and advice on the following topics:

1. Smart Human
   - Human Machine Interface, Wearable Computing, Personal Devices, ...

2. Cloud-Internet
   - Cloud Computing, Internet of Things, M2M, Remote Access, ...

3. Artificial Intelligence
   - Artificial Intelligence, Assistance Systems, Machine Learning, ...

4. Digital Factory
   - Virtual Reality, Augmented Reality, MR, Virtual Commissioning, ...

5. Robots
   - HRC, Mobile Robot, Autono. Vehicles, ...

04/03/2020
www.issa.int
ISSA – Section Machine and System Safety

Symposium No. 17
“OSH challenges for manufacturing in the digital age”

You are welcome to submit an abstract: https://www.safety2020canada.com/
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- Digital transformation – effects on OSH in manufacturing

- Main target group: SMEs

- Participants:
  - AUVA
  - BGN
  - IFA
  - INAIL
  - SUVA

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- Topics to consider – Safety & Security

Cyber attacks with different strategies

- Environmental Damage
- Product Quality
- Sabotage
- Terror
- Impairment Damage
- Machinery Manufacturer
- Know-how and data loss

Safety

Security

Customer
Human
Environment

.directly
indirectly
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Fact Sheets on cyber security

Topics:
- “Safe password” - How to make passwords safer/stronger?
- “Up-dates” - How to make correct and safe up-dates?
- “Human aspects” - How to consider the human aspects?
- “Remote access control” - What is a safe way to do remote access control?
- “Digital manufacturing and related risks” - What risks occur from digital manufacturing?
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- Topics to consider – 5G / AI / Clouds in a digital factory
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- Challenges to consider – 5G / Clouds in a digital factory
  - Guarantee a safe operation
  - An increasing of latency (if necessary) must be considered under security aspects
  - Pay attention to EMF radiant

- Challenges to consider – Artificial Intelligence
  - Where can an AI algorithm be used
  - Certification of an AI algorithm (over lifetime)
  - General Data Protection Regulation
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- Topics to consider – Use of AR/HMD
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- Challenges to consider – Use of AR/HMD in a digital factory
  - Ergonomic aspects
  - Pay attention to EMF radiant
  - Battery safety
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- **Topics to consider – Human Factors**
  - Human factors design requirements for safe and healthy human interaction with machinery
  - Requirements, explanations, examples, references for
    - Work system design concept
    - Work behavioural issues
    - Work place issues
    - Work equipment and software issues
    - Work with cyber-physical systems issues

[https://safe-machines-at-work.org/human-factors]
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- Additional topics to consider in a digital factory
  - Tables and mobile phones for safe machine control
  - Collaborative robots
  - Smart PPE
Interested in cooperation? For more information please contact:

Hans-Jürgen Bischoff  
Dynamostrasse 7-11  
D – 68165 Mannheim  
scholl@ivss.org

Christian Werner  
Alte Heerstrasse 111  
D - 53757 Sankt Augustin  
christian.werner@dguv.de