Industrial Cobotics for the factory of the future

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COBOTICS ≠ ROBOTICS
WHY COBOTICS?

Performance

Working conditions

Safety

Keep experts in their jobs

Reduce investment cost
INTRODUCTION

Pluridisciplinary team

- Ergonomics
- Cognitics
- Robotics

Methodology

Use case 1: Tank cleaning
Use case 2: ...
...

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1 « Cobotization » methodology
Goal: help to design cobotic systems

1 / « Cobotization » methodology

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1 / « Cobotization » methodology

1 Preliminary analysis
2 Theoretical solution
3 Basic design
4 Advanced design
5 Industrialization

Activity analysis:

- Interview
- Observations
- Debriefing

Real operations

Formalization
1 / « Cobotization » methodology

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Technology review:

1 / « Cobotization » methodology

1. Preliminary analysis
2. Theoretical solution
3. Basic design
4. Advanced design
5. Industrialization

Theoretical solution:
1 / « Cobotization » methodology

Simulation-based approach with the future users:

- Preliminary analysis
- Theoretical solution
- Basic design
- Advanced design
- Industrialization
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- Technical specifications
- Setting up
- Teaching
- Certification
- Putting into service
Use case: Tank cleaning
2 / Use case: Tank cleaning – Activity analysis

Removed pictures for confidentiality reasons
Goals:

- Improve working conditions
- Remote pyrotechnic operations
- Reduce cycle time
2 / Use case: Tank cleaning – Interactive mockup

Tank cleaning **interactive mockup**:
Teleoperated scrubbing test:
CONCLUSION

Methodology:

- Interdisciplinary team
- Including safety and normative aspects
- To be completed (industrialization step in progress)
- Currently tested through other projects
CONCLUSION

Cobotics:

- Benefits
  - Working conditions
  - Performance
  - Flexibility

- Pyrotechnic workstations
  ↔ Teleoperation
SPECIAL THANKS TO

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