

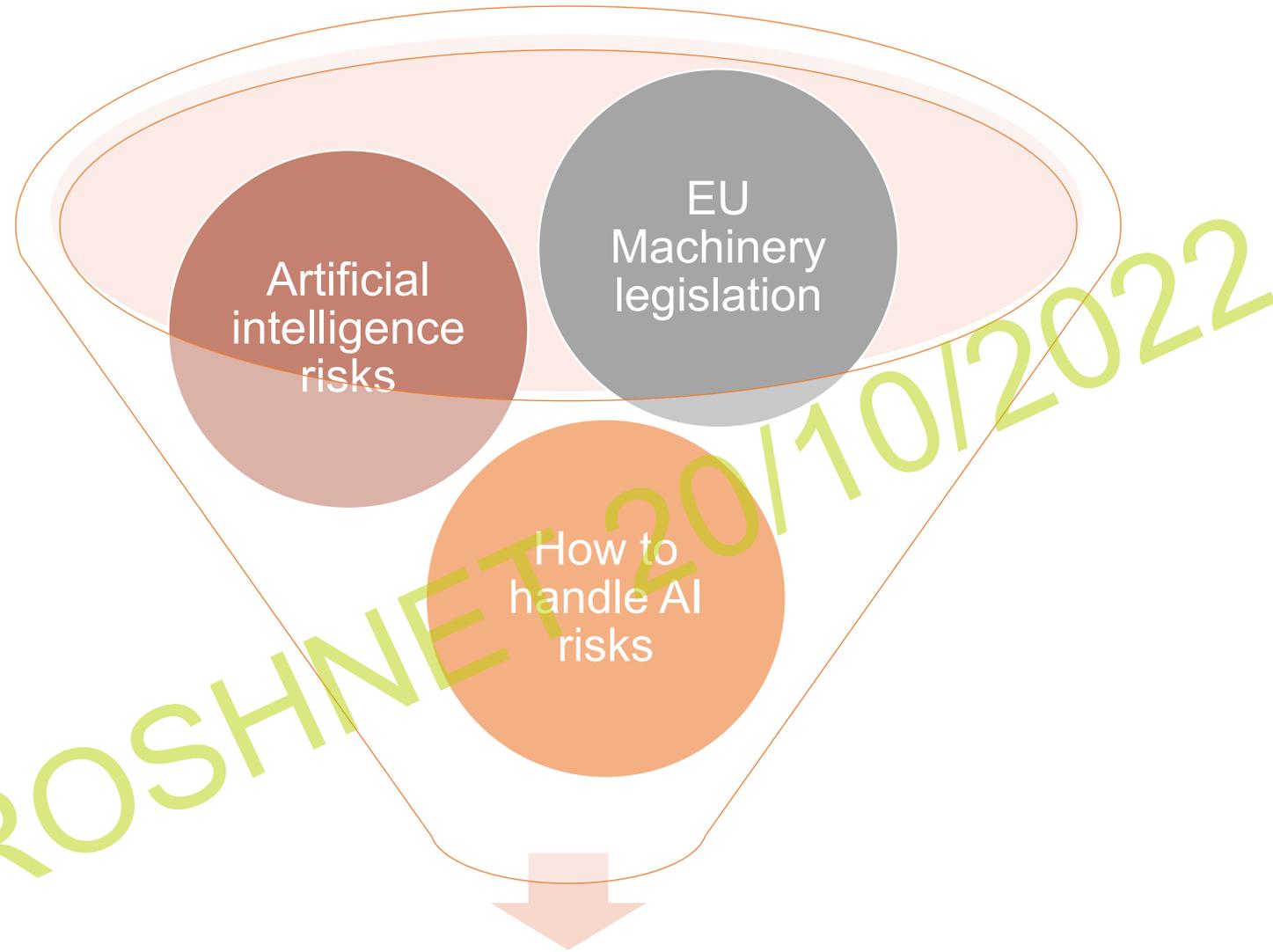


**ARTIFICIAL
INTELLIGENCE**

MEETS SAFETY AND
HEALTH AT WORK

Machinery regulation: A tool contributing to ensure Artificial Intelligence safe machines

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Safe machines with artificial intelligence



EU Machinery directive





EU machinery directive

Mandatory safety objectives
(essential health and safety requirements)

Voluntary use
harmonised standards
published OJEU

CE marking
conformity assessment procedures

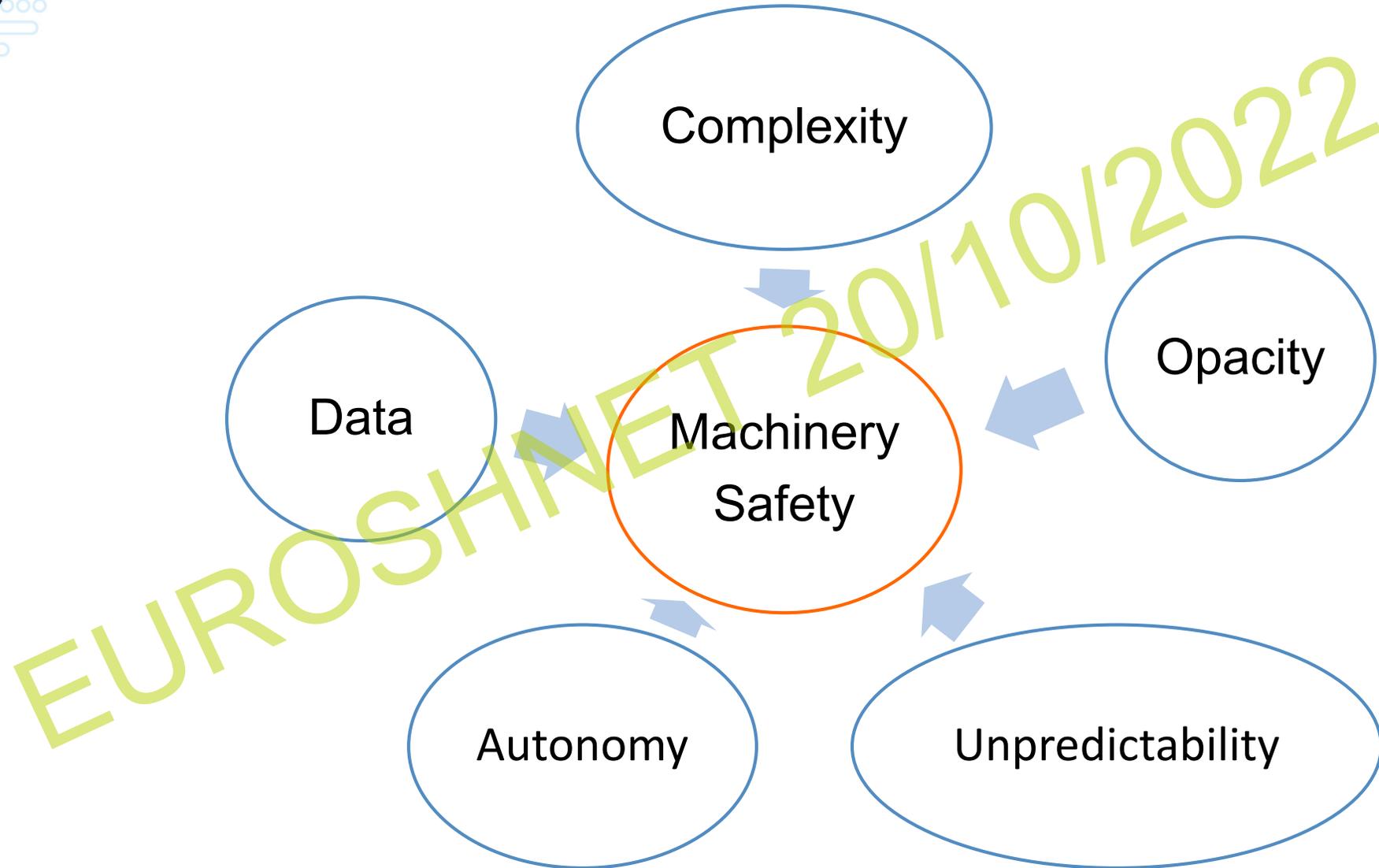
Self-assessment
manufacturer

Notified body

Market Surveillance for enforcement



Artificial intelligence risks





Does EU machinery legislation cover AI safety risks?

Commission report
safety & liability
implications
AI, IoT, robotics

- Technology neutral
- No explicit requirements
- Legislation to be adapted



How to handle AI risks?

Artificial
Intelligence
regulation

Machinery
regulation



Artificial intelligence regulation

Requirements for AI systems ensuring safety

No high-risk

EU General Product
Safety legislation

SAFETY NET

High-risk

AI regulation

- Standalone safety components
- Safety components embedded in machinery



Machinery regulation

Increase safety

Address digitalization challenges

Increase clarity and uniform application

Reduce manufacturers' burden



Machinery regulation & AI

- Risk assessment

- ✓ Risks due to machinery's evolving and autonomous behavior may appear **after** the machinery is placed on the market

- ✓ If those risks cannot be foreseen, the machinery **cannot** be placed on the market



Machinery regulation & AI

- Reliability and safety of control systems
- Human - machinery interaction
 - ✓ More powerful, autonomous, humanoid machinery
 - ✓ Closer cooperation with operators/ users
 - ✓ Adapting EHSRs to:
 - prevent psychological stress
 - respond to people adequately
 - inform on the planned actions



Machinery regulation & AI

High risk

AI standalone system & embedded in the machinery
ONLY if ensuring safety functions



Conformity assessment

Mandatory third party body



Interplay Machinery & AI regulations

Interplay requirements



AI regulation
Safety risks of AI systems



Machinery regulation
Overall safety of the machinery product
Annex III requirements

High risk AI systems



AI regulation
AI systems are safety components of a machinery product



Machinery regulation
Annex I
Third party conformity assessment
or harmonised standards are fully applied



Next steps

- Adoption of Machinery regulation
- Standardisation request to European Standardisation Bodies
- Machinery Expert Group discussions



Further information

Machinery website:

<http://ec.europa.eu/growth/sectors/mechanical-engineering/machinery/>

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