

Towards an AI assistant for grid operators

SC C2

PS1 - Question 1.8:

Can AI replace a human operator in system operations ?

Antoine Marot - France

AI will not replace operators any time soon

Why do we still have human pilots in the airplanes today while there are flying mostly automatically ?

- Responsibility, accountability and alignment with human objectives are still major concerns.
- Coordination is still required and AI can barely help with that today
- Humans are still very flexible and able to adapt quickly in unseen configurations using some common sense
- Human can spend time planning strategic trajectories
- AI is suited to support task completion but hardly to replace full human activities

Pretty similar considerations in power system operations for the next decades

See “Ironies of Automation” (1982) also - Deskilling vs Complex Take Over paradox

➔ We foresee the development of AI Assistants for Operators and Teams

Group Discussion Meeting

❖ **Potential and challenges of AI-powered decision support for short-term system operations, PS1 C2 CIGRE 2022, J. Viebahn, M.Naglic, A. Marot et al.**

Automation vs Hybrid Intelligence - Operator acceptability ?



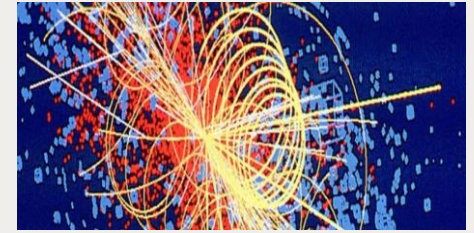
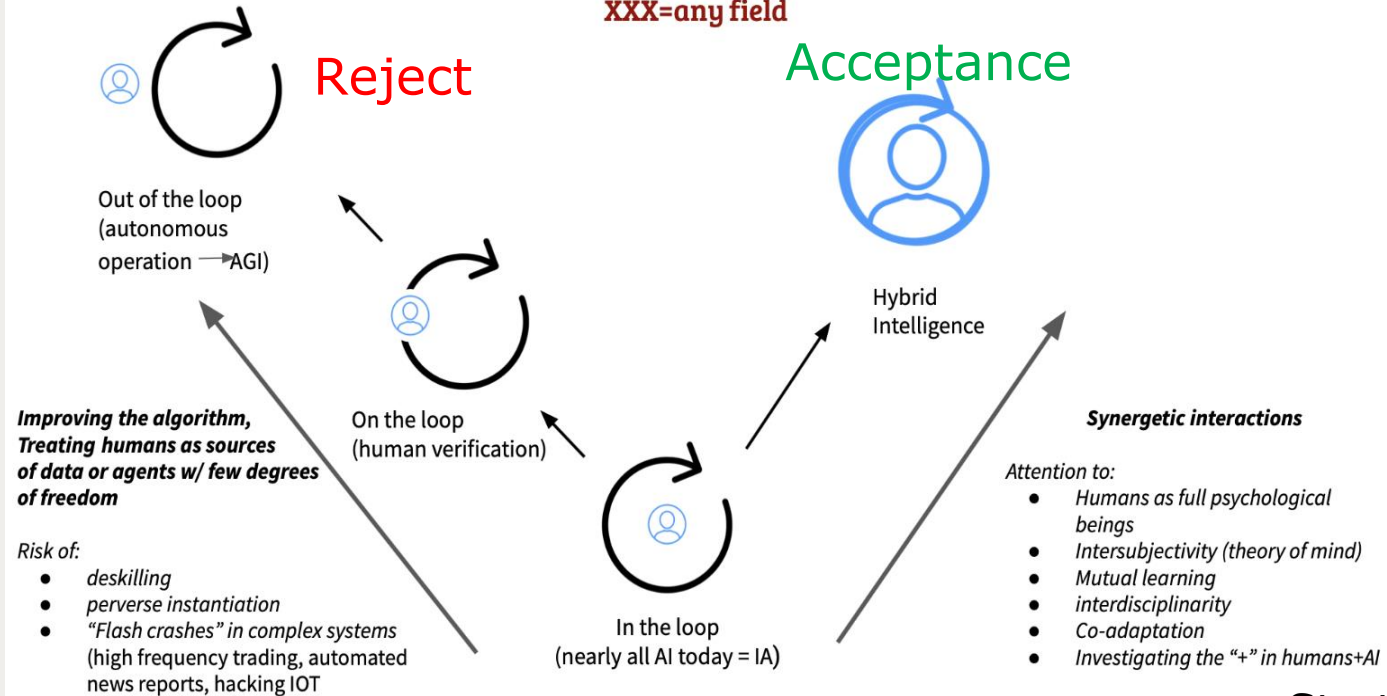
Amazon Warehouse worker
Low acceptance



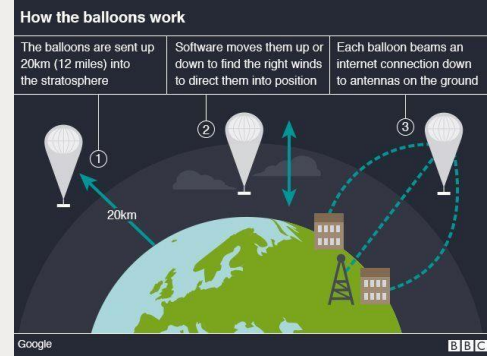
Google data center cooling
Partially acceptable

How can we improve XXX with out deskillling humans?

XXX=any field



LHC
Collisionner operations
Acceptable



Stratospheric balloon network
New - Acceptability ?

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AI assistant + unified Hypervision interface for future operators

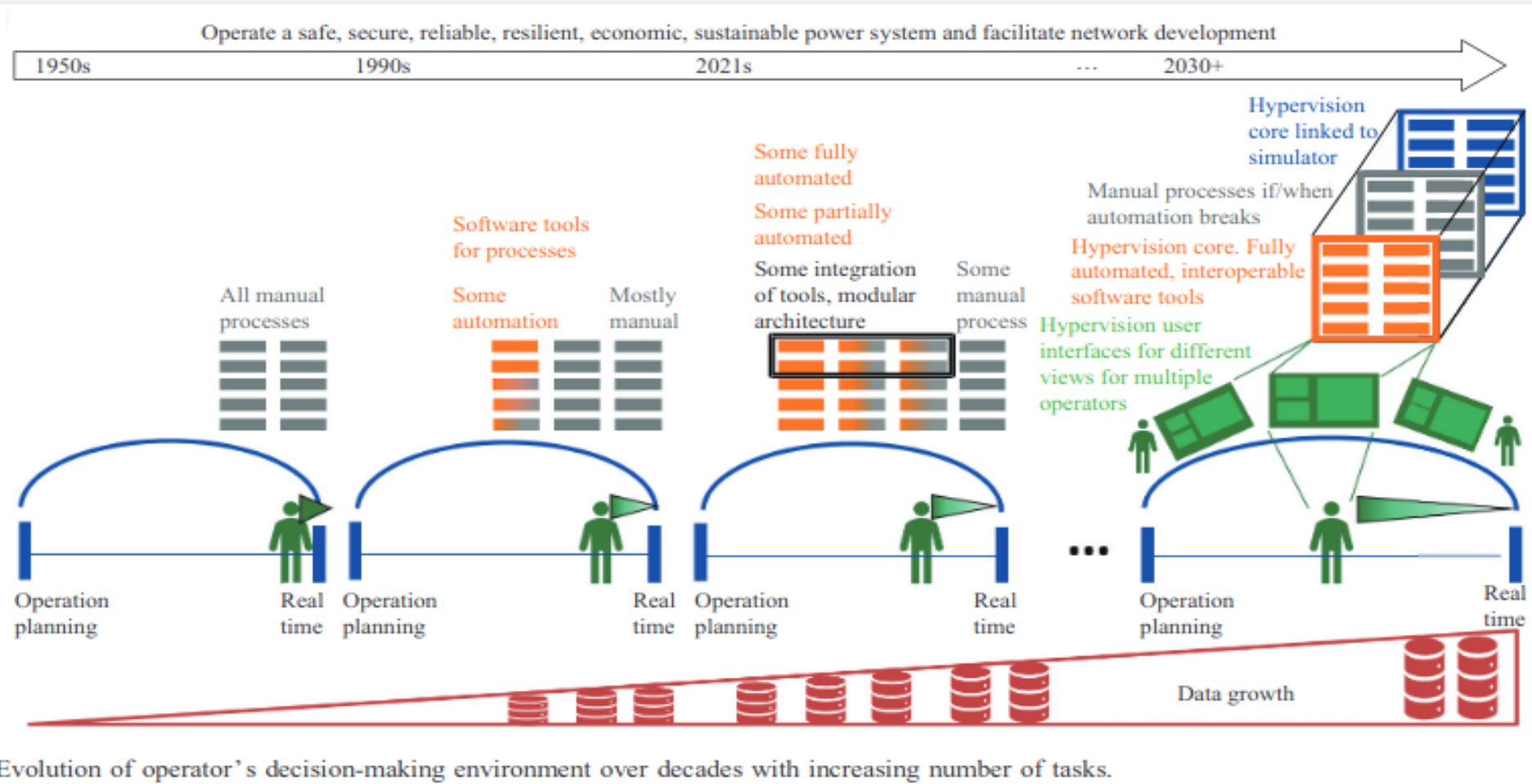


Fig. 2. Evolution of operator's decision-making environment over decades with increasing number of tasks.

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Perspectives for Future Power System Control Centers for The Energy Transition, Journal of Modern Power System and Clean Energy, 2022, A. Marot, A. Kelly, J. Cremer et al.

Towards an AI assistant for power grid operators, Hybrid Human AI Conference 2022, A. Marot et al.