

MEANINGFUL HUMAN CONTROL

A SOLUTION OF MILITARY AND INDUSTRY



**If the problem is how to maintain
meaningful human control of
autonomous warfighting systems,
no good solution presents itself**



Issues



Accountability gap



Design & Deployment

APPROACHES TO

MEANINGFUL HUMAN CONTROL



Designer-user
Engagement



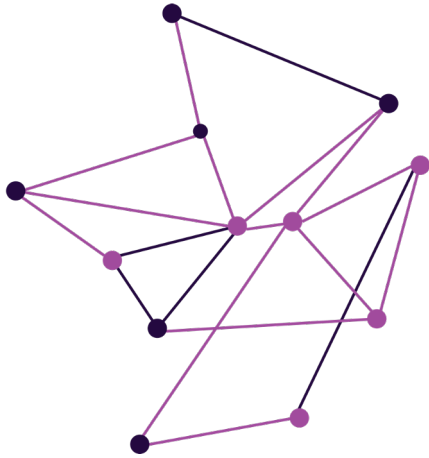
Design
Requirements



Operations
planning



Designer
Responsibility



Coupling Levels of Abstraction

1. AWS and *ACTUAL* Military Operations
2. Designing for Values

The Operational Level of Control



Military as
*Supra*Individual
Agent

*“there are no fully autonomous systems just
as there are no fully autonomous soldiers,
sailors, airmen or Marines”*

Operations Planning

Pre-Mission



Briefing

- Target
- Coordinates
- Collateral damage
- Weapons selection
- Weather

Mission



Find



Fix



Track



Target

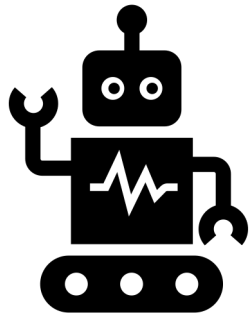


Engage

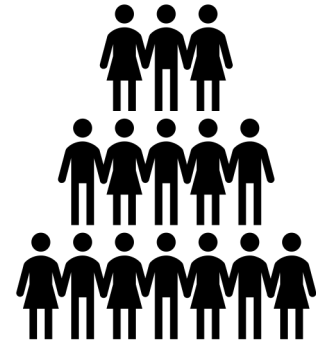
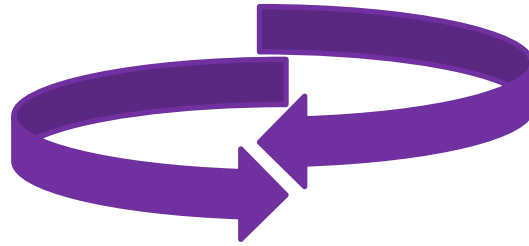


Assess

The Design Level of Control



What a
system
does



What
people
intend

Conditions for Design

Tracking



Systems have to be responsive to the relevant moral reasons of agents

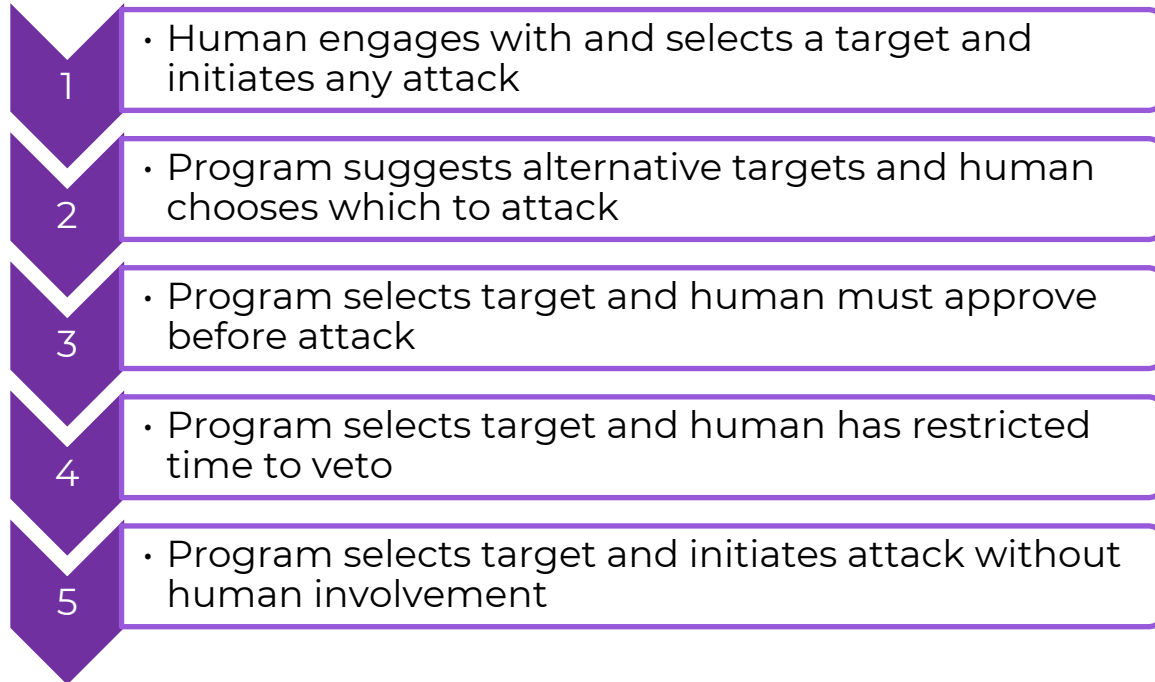
Tracing



We must be able to trace at least one agent who understands the system

MHC as design thinking and design engineering as MHC

Technical full autonomy and AWS



GET IN TOUCH



Steven.umbrello@unito.it



Stevenumbrello.com



Steven Umbrello



@StevenUmbro