

# Co-design processes for cleaning and facilities services system

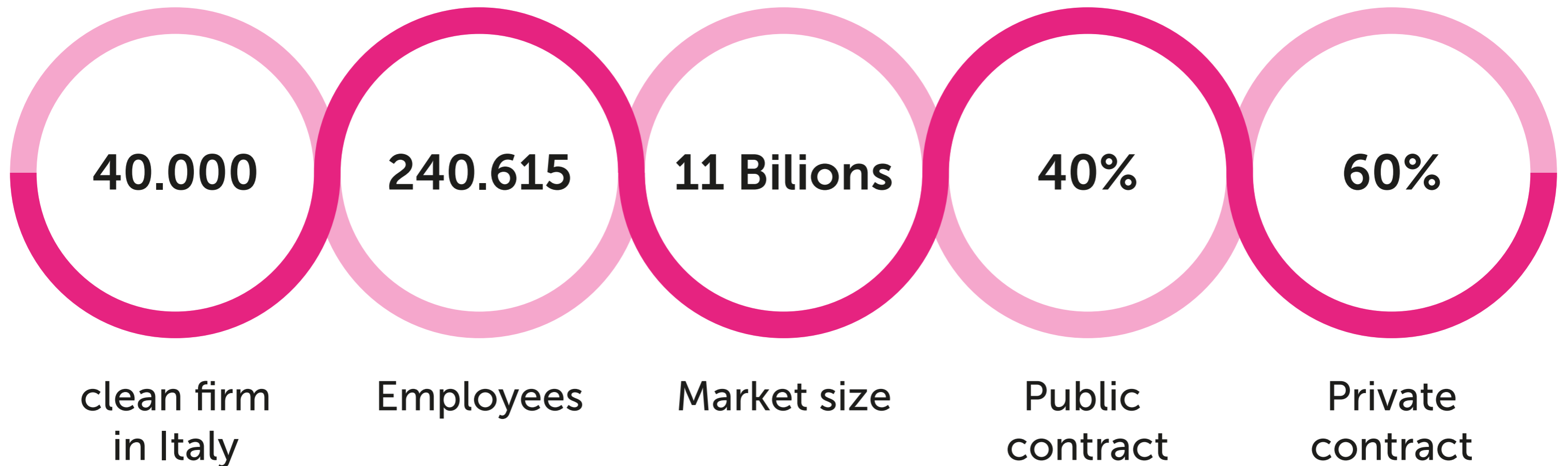
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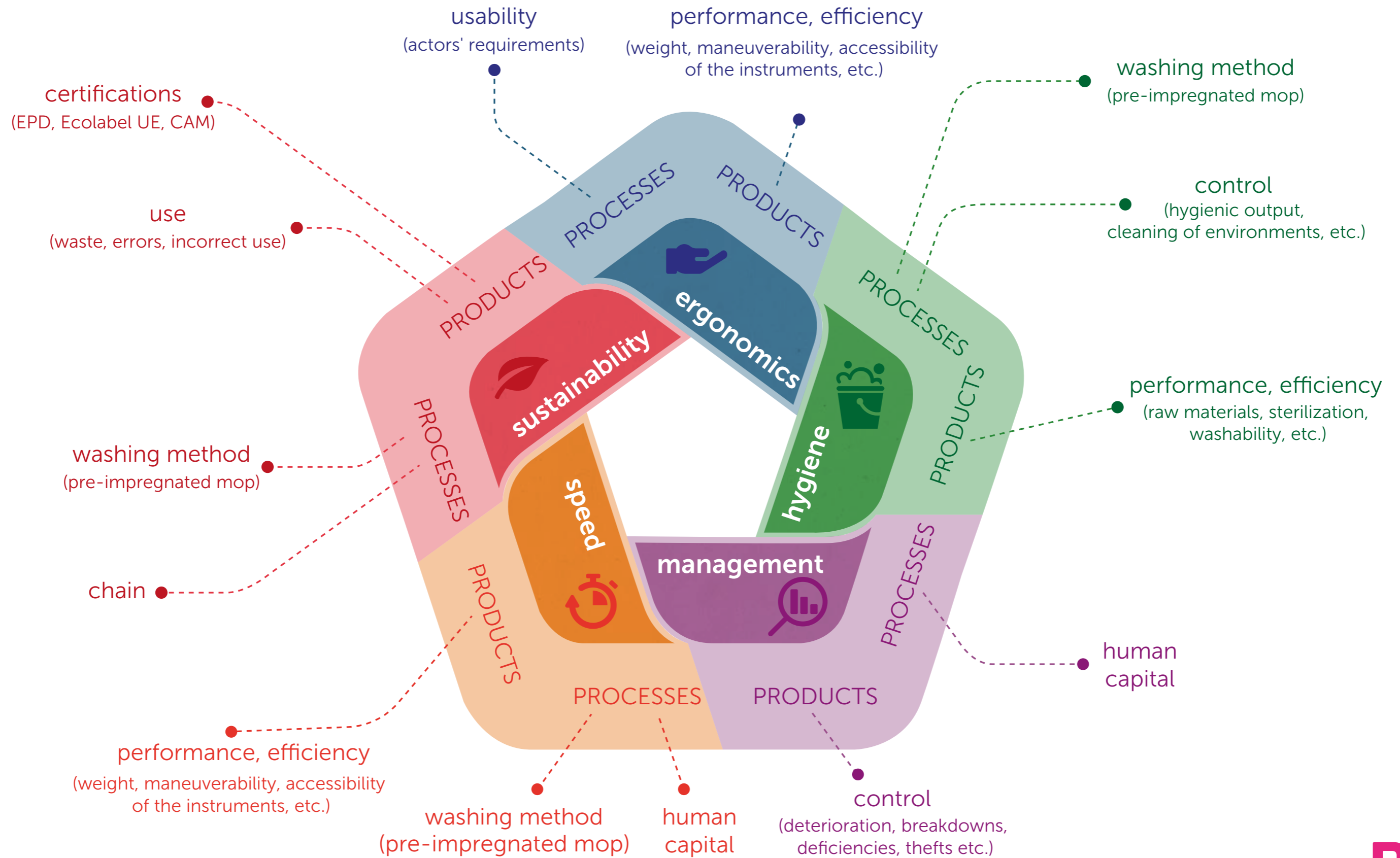


# PROFESSIONAL CLEANING IN ITALY

CLEANING CHAIN | production > distribution > service



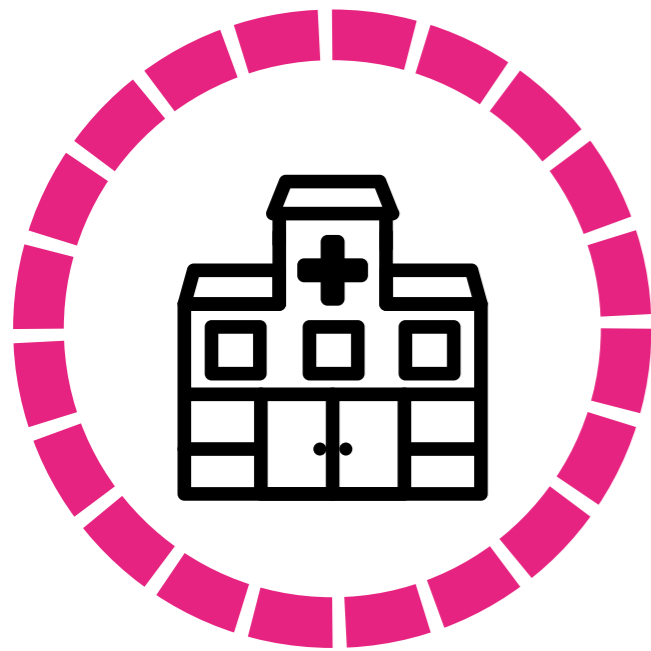
# ASSETS



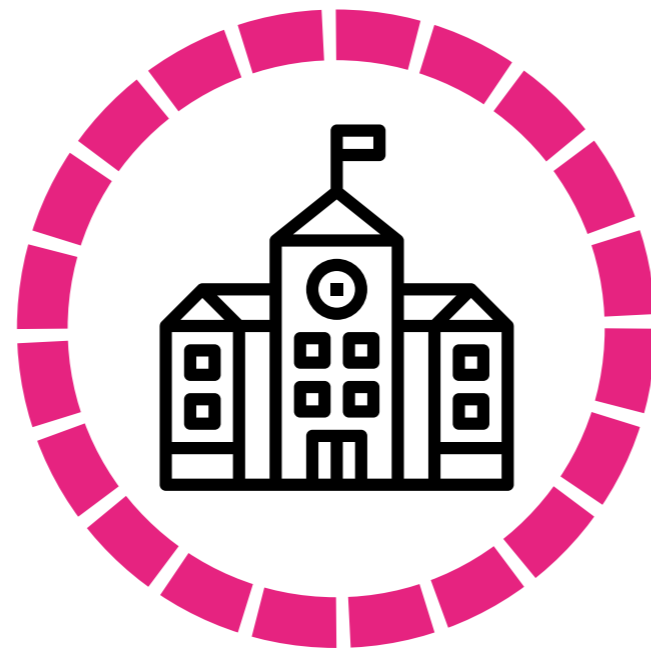
# CLEANING OFFER STATE OF THE ART

**SERVICES** | cleaning > furniture > welfare (management and training)

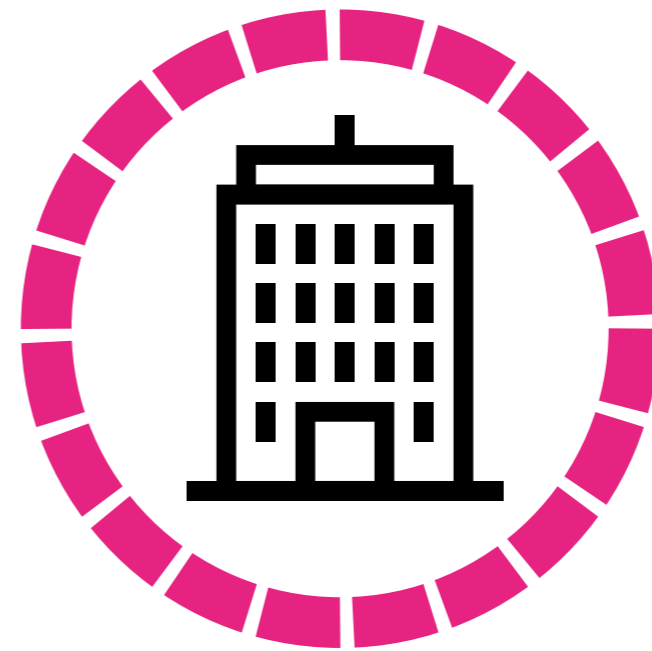
## ENVIRONMENTS:



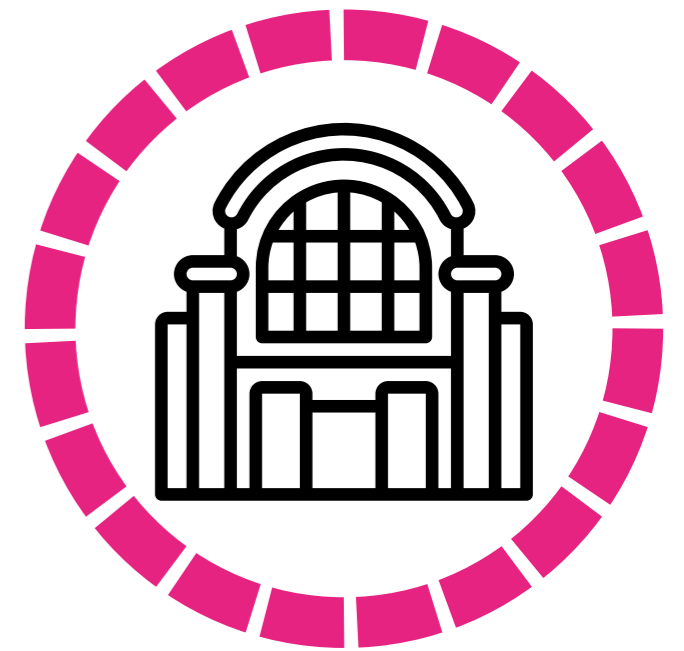
**hospitals**



**schools**



**industries**



**malls**

# STATE OF THE ART SUGGESTIONS

## SMART PRODUCTION

*"... new production technologies shared by production-related actors that foster collaboration between people, machines and systems."*

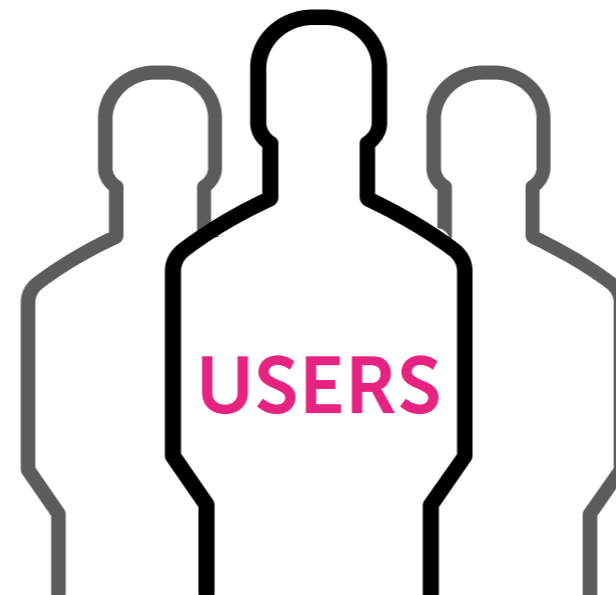
## SMART SERVICES

*"a new generation of information and technical infrastructures that helps manage and monitor systems, exploiting the logic of maximum integration between all the actors of the production chain, including customers "*

## SMART DEVICES

*"...interactive electronic gadgets that understand commands sent by users. and help in daily activities. They are defined by their ability to connect to a network to share and interact remotely"*

involve





## SOCIAL INCLUSION

*The act of making all groups of people within a society feel valued and important.*

## PARTECIPATORY ECONOMICS

*The underlying values that PE implement are equity, solidarity, diversity, workers' self-management and efficiency (defined as accomplishing goals without wasting valued assets).*

# USING HCD AND CODESIGN STRATEGY FOR:

- > Identify the virtuous relationships among actors, processes and tools
- > Implement them systematically in the supply chain of cleaning activities.
- > Identify needs
- > Build a creative environment

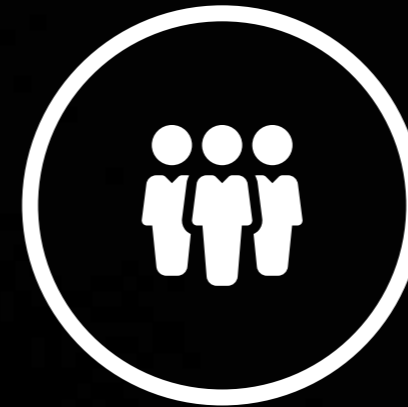
# UX TEST

HOW



ethnographic  
questions

WHO



10  
highly skilled  
users

WHERE



Mirafiori city  
of design

TOOLS

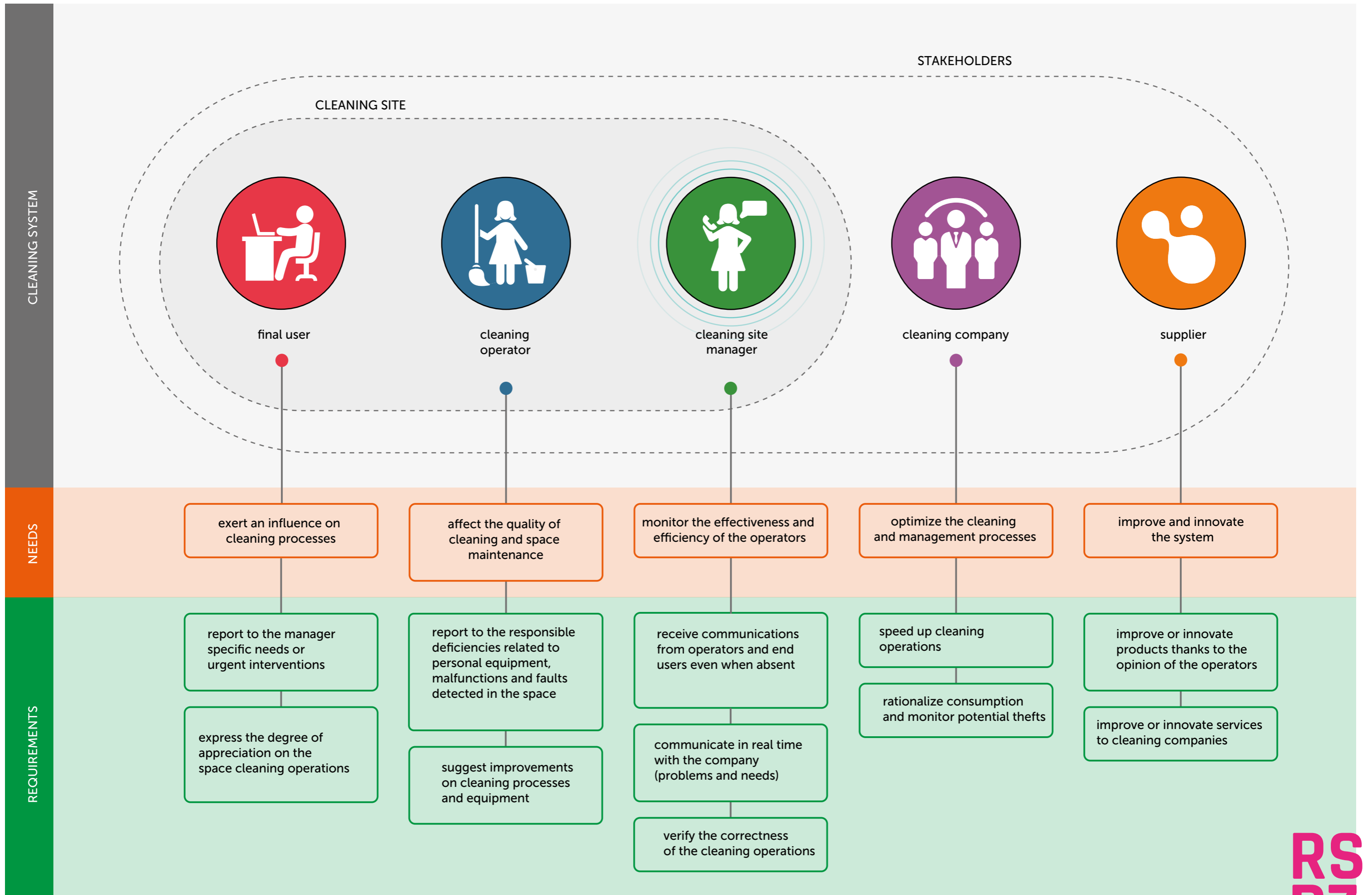


Mops



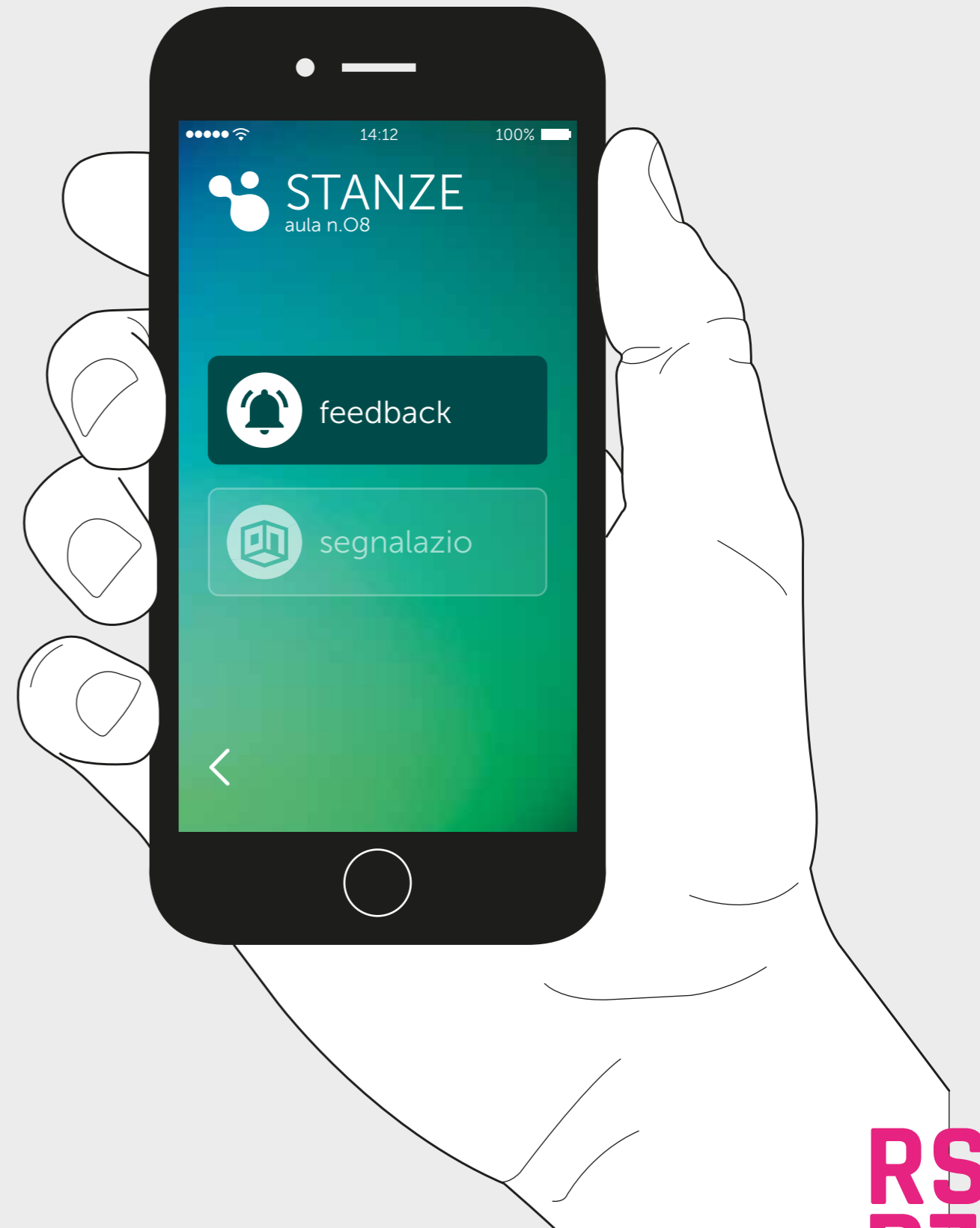
# DESIGN INSIGHT

- > movements and fatigue factors
- > social aggregation
- > linguistic gap
- > communication and management (towards users and firm)

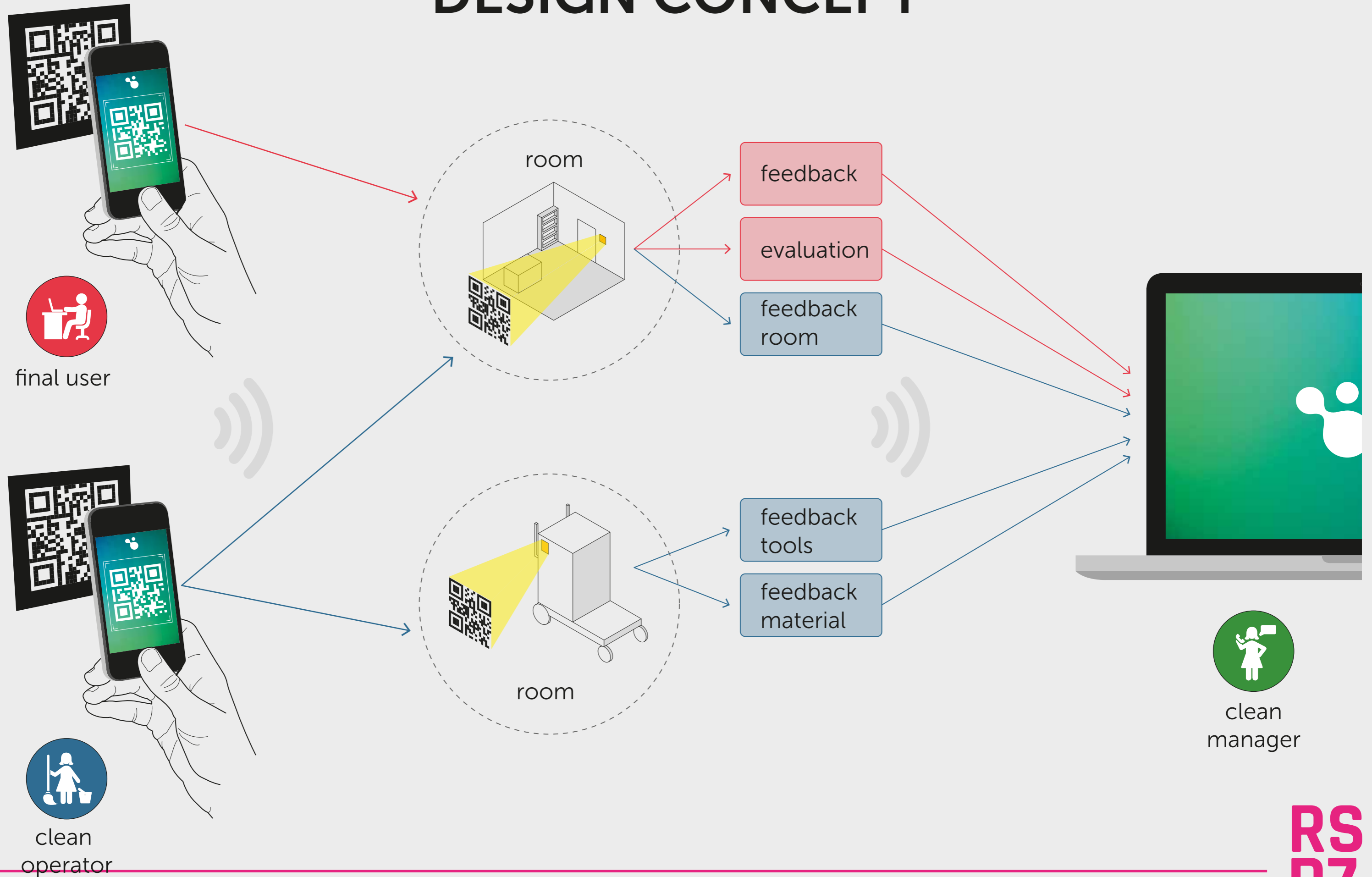


# DESIGN CONCEPT

- Automated and interconnected production models;
- Intelligent and communicating products;
- Traceability of processes that fosters collective information;
- Shared and collaborative production model at the supply chain level;
- Cloud storage of a significant amount of collected data and their accessibility.



# DESIGN CONCEPT



# DESIGN CONCEPT

