

Challenges for Future Automated Logistics Fleet Interactions

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Automated Logistics Fleet Interactions

AWARD's goal: *Unifying the automated fleet management interactions for different use cases*

Analyzed five fleet management tools

- What's state of the art?
- Many different users and different use cases
- Many underlying systems
- No clear picture
- Everybody regards their system as legacy

Challenges in three areas

- Requirements for the Emerging Operator Workplace
- Digital Consolidation and Interconnection
- Required Human Interface Characteristics

Requirements from the Emerging Operator Workplace

Clarify roles: Make tasks, KPIs, responsibilities transparent and manage the variety of operational scenarios

Take account of diversity of users and multitude of work contexts

Address known human factors issues: Out of the loop syndrome, latency issues, situational awareness through missing embodiment, workload, fatigue

Enable communication: Interfacing with other organizations and handover to the next operation



Required Human Interface Characteristics

Unified design for different devices

Adaptation to work context

Integrated teleoperation

Awareness and intent of the vehicles

Quality-of-Experience

Ubiquitous access

Diversity-aware interface

Realistic representation of remote situation

Reliability displays for trust calibration

Attention management



Digital Consolidation and Interconnection

Consolidation of heterogeneous subsystems: Integration of fleets (logistics, public transport, car sharing, traffic management), support of multiple use cases and scenarios

Decision support: AI and Big Data analytics, optimization techniques

Seamless Information Flow: Real-time access to data and information from multiple sources, to allow a more responsive real-time scheduling

What`s next?

1. Identifying the emerging operator workplace
 - Analyzing the operator workplace of future vehicle fleet users
 - Creating a persona
2. Deducing patterns associated with their current requirements
3. Identifying and incorporating the underlying system ´s features
4. Creating patterns
5. Designing future human interfaces for automated logistic fleet interactions

Challenges

Creating a persona! Who will be the future operator of automated vehicle fleets?

- Are there multiple operators?
- Task separation?
- Use case specific?

How can different fleet management systems be unified while still preserving every user's needs?