

Autonomous Highway Futures: Value Mapping

RS3, Security Node, Lancaster University



Engineering and
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About Us

As part of the TAS Security Node, our work at Lancaster examines the User environment of Autonomous Systems (AS). To help understand how AS currently operate and will operate in the future, with and among society, our work draws on the Ethical, Legal, and Social Implications (ELSI) framework. ELSI makes visible the connections, entanglements and responsibilities involved in the production of new AS technologies.

Grounded in the framework, we design creative and contextual methods for collaboration, including **value mapping**, to explore the concerns, agendas, and priorities of our partners. Below are some brief elaborations on our value mapping exercise with a major UK public body in the context of Autonomous Highways

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- ❖ **A value is anything of importance, something which has bearing on work**
- ❖ **Values can signify standards, goals, beliefs, ways to measure practice**
- ❖ **What values inform the conceptualisation and implantation of UK Autonomous Highway Network?**
- ❖ **What trade-offs between values and practices are required?**
- ❖ **How do our values of Trustworthiness, Ethics, and Security, change in their encounter with others?**

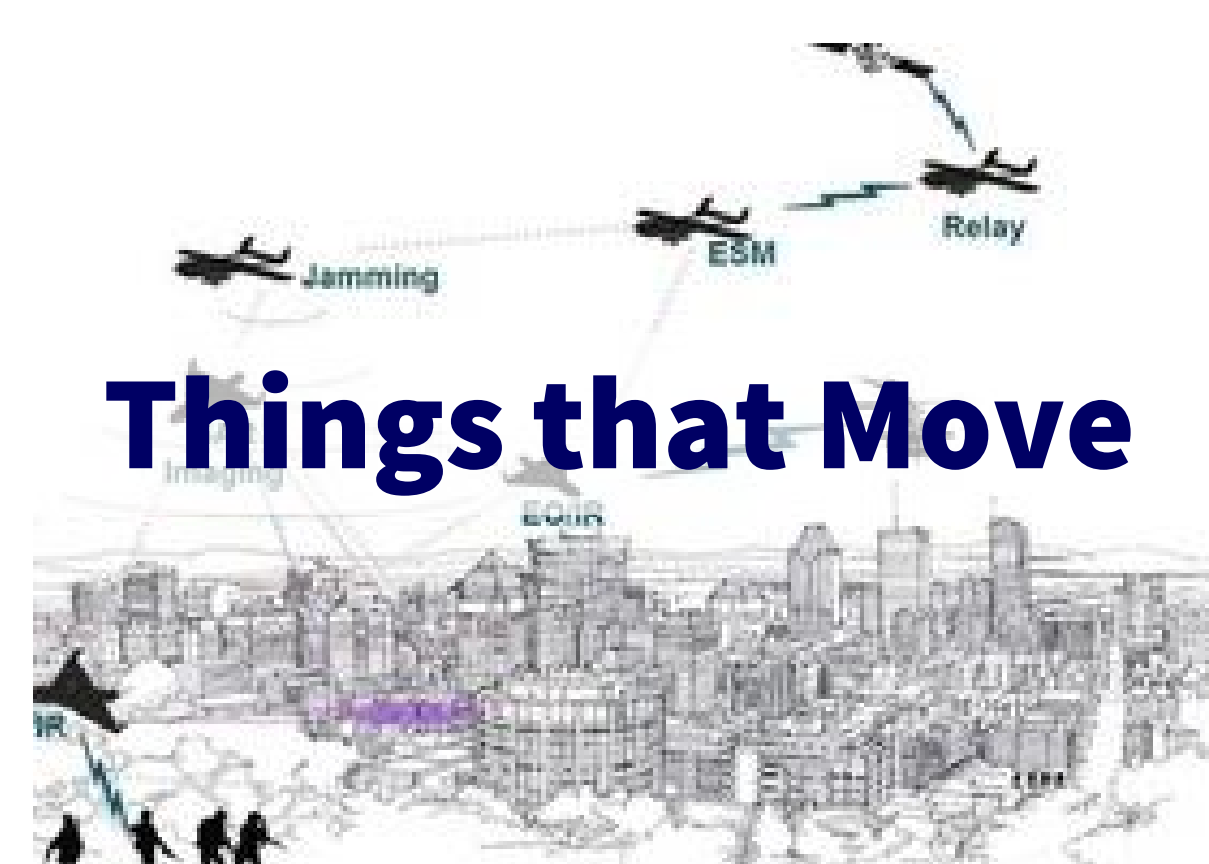
As part of our research, we are partnering with a major public body in the UK, to collaboratively explore ways of imagining an increasingly autonomous UK road network. One of the main challenges in cross-sector collaboration is finding a common space and understanding to tackle issues. Value-mapping can be a useful exercise to start things up, as it allows open conversation, it allows collaborators to set the agenda, and it can facilitate multi-scalar approaches, moving from the broadest scale issues to specific details of a single system. Value-mapping helps to deal with the increasing uncertainties associated with more autonomous systems. While not everything can be predicted, having a good understanding of one's individual and organization values creates a solid foundation for making secure AS futures.

Value Mapping: Elements



The Spaces

In what physical and/or virtual spaces do the autonomous systems you work with operate, and how might these spaces grow or change



Things that Move

What are the actual systems involved in these spaces, how do people figure as part of those systems, and how do they move?



Information

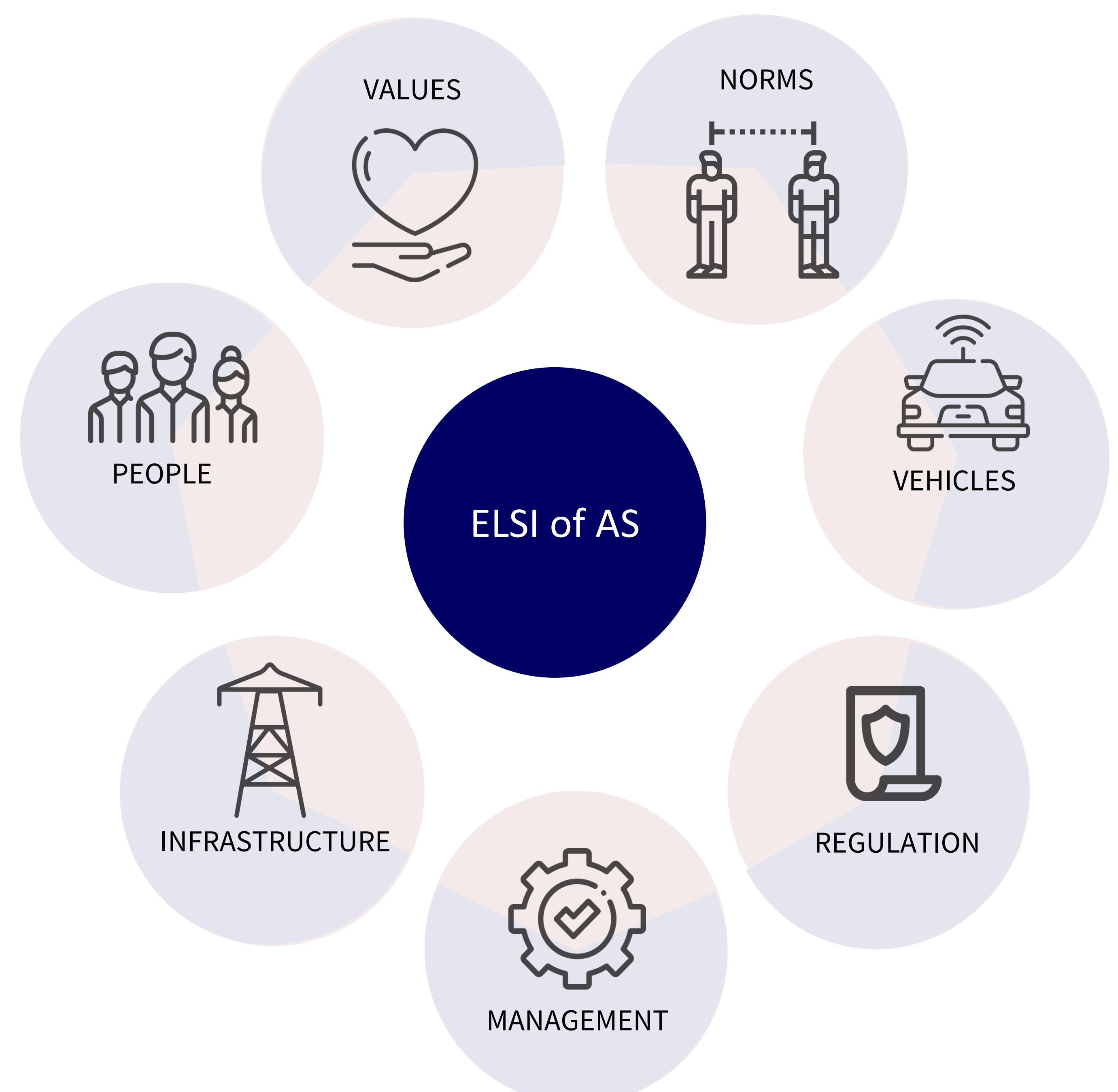
What data, knowledge, expertise or other information circulates between these spaces and systems?



Uncertainties

What happens when something occurs you can't predict? What sort of protocols do you use to maintain preparedness for unexpected events?

ELSI of Autonomous Highways



Value-mapping takes these elements as interconnected, visualizing ties and entanglements between different levels of imagining autonomous highway futures. By visualizing these connections, collaborators can literally see how the things important to them relate to one another, and creates a starting point for plans of action.

Value-mapping is one part of a larger framework for ELSI of AS, which includes the elements visualized above, and others. Both ELSI and Value-mapping insist that collaboration is vital for making more secure, more ethical autonomous highways. The methods we are using in the Security node help to achieve this.



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