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Title	Research into the system elements needed to guarantee the reliability, availability and integrity of decision making information in a complex autonomous system.
Abstract	<p>The current air traffic management systems are centred around piloted aircraft, in which all the main decisions are made by humans. In the world of autonomous vehicles, there will be a driving need for decisions to be made by the system rather than by humans. The system will have to decide on courses of action that will have highly safety critical consequences. One way to ensure that these decisions are robust is to guarantee that the information being used for the decision is valid and of very high integrity. To meet regulatory requirements there will still need to be some form of human involvement, or back up, and the interface between computer and human will be very important. This doctorate will examine all the issues associated with guaranteeing that information on which decisions will be made is valid and of very high integrity. This will mean looking at all data sources on the vehicle and external to it, determining the best way to fuse this information for decision making purposes, working out where the best place to do the decision making processing is, (i.e. on-board or remotely), examining how to share the decision making between human and system, and ensuring that the human interface is intuitive and robust.</p>