Mission critical application based on the Control Loop Processor: architecture and development flow of the Ariane 6 P120 Thrust Vector Control system embedded software

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SABCA has developed with ESA support the Control Loop Processor (CLP), a deterministic processor under integration in next generation European space vehicles Thrust Vector (Vega-C, Ariane 6) & Flap (Space Rider) control systems. The determinism of the processor architecture and associated embedded software ensures the complete system behaviour predictability, a key feature for tomorrow intelligent systems in charge of mission critical processing.

This presentation will introduce the specificities of the Control Loop Processor's architecture and application development environment in order to highlight how a user can take advantage of such platform in the design, validation and integration of embedded software for mission critical applications. Illustrative examples will be provided based on an internal SABCA use case: the ongoing Ariane 6 P120 Thrust Vector Control system development activities.

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