

Comments on the Paper “Dealing with Temporal Uncertainty and Reactivity in a Space Mission Plan”

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The author of these comments is not an authority in the area of planning and scheduling or on automaton formalism. The commentator does have significant experience in the area of flight system development, test and mission operations.

The author of the paper has proposed a mechanism for planning and scheduling using Time Game Automata for planning and scheduling problems. The commentator will restrict his comments to only space based missions.

Historically planetary missions pose sequencing problems that are solved in a serial manner regardless of the parallel function of the activities. The author propose an approach that uses waypoints to restrict (control) dynamic controllability. The approach seems to offers a nice trade between expressiveness, optimality and efficiency to help solve on board planning and scheduling problems that have historically been solved on the ground with humans.

The commentator feels that this approach should be developed further and evaluated against parallel activities that occur on a spacecraft that would involve planning and scheduling. The author uses a limited DS-1 example to illustrate the approach. It would be beneficial to take a larger set of DS-1 activities and apply this approach to see if it truly offers an advantage.