

Demonstration of Autonomous Rendezvous Technology (DART)

Case Study Transcript

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DART Overview

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DART was selected as part of a NASA research announcement under the SLI (Space Launch Initiative) project. SLI was a part of the 'second gen' program. This was going on in about 2001 with the solicitations and the proposal evaluations. About 25 contracts were awarded in June 2001. It's interesting to note that DART actually was in the early decisions with the source selection committee not to be selected. At the time I was working a smaller program called Alternate Access to Station, or AAS, the objective of what we were trying to do, totally separate from SLI, totally separate from the source procurement, was looking at options for providing Space Station cargo re-supply, planned cargo and also emergency missions, like emergency medical supplies. One of our objectives was to identify technologies that would be needed to make those missions reality. We kept coming back to the need for autonomous rendezvous or the technology that says, 'I don't need man in the loop.' So in other words these missions would be launched on a quick turnaround within, say, two weeks, and they would go directly to station with no pilot, no man involved in the loop. So, autonomous rendezvous was the driver for what we were trying to do there. We were unaware of what was going on with the SLI procurements, so we got a phone call one day that says, 'Hey you guys need to come, come to the procurement area and take a look at what we've got down here.' That's what we were told. So we go in and we find this proposal for DART testing autonomous rendezvous. It's perfect for what we need and so we got involved with the source selection, and we were able to convince the committee to select DART.

So June 2001 we got the Authority to Proceed and it was—as you can imagine with 25 contracts starting at once—there was a lot of confusion going on with respect to, 'Okay, who's the manager for this contract. How's it going to be organized.' So we hit the ground running without a real organization set up. So, here I was starting out with Authority to Proceed, I had one, maybe two, people assigned to me at the time. There was some engineering support because the key component of DART was the VGS, the video guidance sensor, which was developed here at Marshall. That was one of the key components of DART, so I had that support, but as far as a project office goes, I had nothing really. So, I started recruiting people and it was interesting. I never really gained permission because there was really no one to gain permission from. So I started going out and recruiting people, and based on the project, I knew I needed supporting software and G&N (GUIDANCE & NAVIGATION). I knew I needed someone that could really help in conducting major reviews because we were laid out to

have CDR by the end of 18 months. SRR was like three months after ATP. PDR was approximately a year and after ATP, and CDR about six months after that—really, really fast paced. So I recruited about four people and one day I got a knock on the door that said, 'You know, you've exceeded your allotment of project personnel. You need to stop.' So I stopped and that was our project office: it was a four person team, really small. And of course DART was proposed as low risk—I'm sorry—high risk, low cost project, so that theme was carried over to the government side as well. So we started. I had no business office. I had no business manager. I had some support but no dedication there. No schedule, scheduler; I had schedule support, but not day-to-day. It was competition with all the other 25 or so projects going on, so it was [an] interesting time. And the other part that is interesting about the way it was set up is there were gates implemented into all the SLI contracts; those gates allowed NASA to terminate if necessary without any repercussions. The gates were ten months—for the first one, was ten months. Second gate, I think, was twelve months after that. And it was interesting that, I don't think many people gave DART a chance of even getting past the first gate. Not sure why, but we were always treated as the red-headed stepchild of SLI, and it was really interesting at the end of the day, the DART project was the only one that ended up going to completion.