

Letter to J Robert Kramer II  
March 12, 2003  
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There are a number of technologies and capabilities of Northrop Grumman that we believe fall within the definition of Payload. To ensure Northrop maintains the separation between its Payload and Satellite businesses, as required by the Consent Decree, reference to particular business divisions of Northrop as well as technologies is appropriate. Raytheon requests modification of Section II.H. of the Consent Decree to make the inclusion of those technologies, capabilities, and businesses explicit.

The technologies and capabilities we believe fall within the definition of Payload that should be specifically identified are: Signals Intelligence, often referred to as SIGINT, millimeter wave technologies, radar technologies regardless of frequency (e.g. 20 MHz to 28 GHz), space and ground mission data processing, payload systems integration, and algorithms.

Space and ground mission data processing, payload systems integration, and algorithms do not fit as neatly into the definition of Payload as hardware components or radar frequencies but these tasks and capabilities are integral to the competitiveness of payload designs. The question is where to draw the boundary between permissible vertical integration and competitive procurement opportunities.

Although space and ground mission data processing may be procured separately from the payload, it is an integral part of the payload business. Payload providers routinely make trades between the payload and ground. The tasking and control of the payload and the subsequent processing of the collected data are integral elements of the payload design optimization process. The scope of the space and ground mission data processing, therefore, materially impacts the design of the payload. With the continued evolution of high speed processors, the data processing function, historically done on the ground, is migrating into the space payload. These trades between payload and ground need to be procured competitively. Northrop recognizes this relationship in their organization; the existing Northrop ground mission data processing capability is part of their Space Systems Payload Business.

The space and ground mission data processing responsibility is a key part of payload systems integration since it involves the ability to efficiently parse the data processing function between space and ground. The Program Research and Development Agreement (PRDA) for the Space Based Radar Program provides a useful description of payload systems integration.<sup>1</sup> We submit the Court should adopt this definition for inclusion in the definition of Payload. The Space Based Radar PRDA states that the radar payload systems integrator shall be responsible for providing key interfaces and requirements data to the prime systems integrator. For example, on the Space Based Radar program the establishment of interface parameters across the Electronically Scanned Array, Radar Electronics Unit, Front End Processor, Back End Processor, Mass Data Storage, Communications,<sup>2</sup> and Data Handling subsystems, with the spacecraft bus are the responsibility of

<sup>1</sup> Since the PRDA represents the government customer's view of the role of a payload provider, with specificity regarding the tasks to be performed by a payload provider, Raytheon submits the Court should use the PRDA as a guide to what capabilities and technologies should be deemed part of the Northrop Grumman Payload Business, which must be segregated from Northrop's Satellite Prime Business.

<sup>2</sup> The Consent Decree explicitly excludes those payloads whose primary mission is communications from the definition of Payload. Raytheon included communications here because it is included in the PRDA for the Space Based Radar program but does not by doing so object to this limited consent Decree exclusion.