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European Space Policy Update Richard Buenneke

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Four decades after the first autonomous European satellite launch, Europe found itself at a crossroads regarding the course of its security space programs. Facing continued struggles to develop dedicated military satellites at the national level, Europe considered a strategy based on dual-use technology and past successes in civilian launch and satellite programs. This approach centered on a series of "great projects" for navigation, global monitoring, and space situational awareness.

Despite early predictions by European military space enthusiasts, a range of political, strategic, and economic factors slowed the progress of these flagship programs. By the mid-2000s, Europe's ability to deploy capabilities that would approach those of the United States appeared doubtful. At the same time, advances in satellite technology could give Europe the ability to develop capabilities that could either create new challenges for the Western alliance or contribute to collective security.

National Programs

Among European nations, France continued to devote the most attention and resources – approximately $800 million per year – to dedicated military programs. Evoking the policies of former President Charles de Gaulle, France launched the first of a new generation of Hélios reconnaissance satellites in December 2004. Looking to new mission areas, France's

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General Armaments Directorate also demonstrated a "swarm" of Essaim electronic intelligence microsatellites. As a result, France had the bulk of non-communications system in orbit by the middle of the decade (see table below)

Comparison of U.S. and European Material Capabilities in Space*

	United States	Europe
Optical imagery	3 satellites	2 satellites (Hélios)
Radar imagery	3 satellites	0
Military meteorology	5 satellites	0
Signals intelligence	15 satellites	2 demonstrators (Essaim)
Early warning	7 satellites	0
Space surveillance	1 demonstrator	0
Satellite navigation	30 satellites	0
Telecommunications	31 satellites	12 satellites (including 2 NATO)
Data relay and secondary missions	14 satellites	1 civil demonstrator (Artemis)

*Situation as of 1 May 2005

Source: French Ministry of Defense, cited in French National Assembly, Commission on National Defense and Armed Forces, "Défense: Équipement des forces; Espace, communications, dissuasion," *Le projet de loi des finances pour 2006, Vol. IX, No. 2540.*

At the same time, budget constraints prevented France from developing an imaging radar system. To increase its access to all-weather intelligence, France and Germany agreed to a "pooled system" that permitted joint use of the electro-optic Hélios satellites and the German SAR-Lupe radar satellites by 2009. France also partnered with Italy on the Optical and Radar Federated Earth Observation (ORFEO) program. When fully operational later in the decade, his program will network the French Pleiades optical and the radar payloads of Italy's Constellation of small Satellites for Mediterranean basin Observation (COSMO-SkyMed).

The dual-use character of ORFEO was repeated in a number of other national and European programs. At the national level, the German space agency began work on TerraSAR-X (scheduled for launch in late 2006) and the British Ministry of Defense launched in 2005 a TopSat minisatellite imaging demonstration.

Budget constraints also led several European governments to leverage commercial technology and financing for their Military Satellite Communications (MilSatCom) networks. On projects such as the United Kingdom's (UK) Skynet 5 or Spain's XTAR, defense ministries would agree to serve as anchor tenants for privately financed satellites. While France, Italy and Germany opted for more traditional government-owned approaches for their Milsatcom systems, these countries also explicitly linked their purchases to national industrial policies.

The emphasis on industrial policy sometimes complicated efforts to enhance interoperability among national European systems. The closest integration occurred in MILSATCOM, where a team of UK, France and Italy was selected to provide capacity for NATO. Coordination was less evident in reconnaissance satellite programs, where systems remained truly "national" with only minimal integration between ground segments.

European Policy

To fashion a grander design for military space, leading European military planners and aerospace executives sought to ensure space helped create an "ever closer union" of European nations. They argued that space technologies could play an

important role in supporting peacekeeping, humanitarian relief and homeland security functions as well as "out-of-area" military operations. Enthusiasm for this approach was greatest among the technocracy of France, where President Jacques Chirac hailed France's role as the "motive force" for ensuring that Europe did not become a "vassal" to an American space hegemon.

By contrast, the UK remained skeptical of any space project that sought to bolster European Union military capabilities at the expense of the Atlantic alliance. German officials also questioned calls by industry experts to double Europe's military space budget, noting financial constraints.

European leaders argued that space technologies could play an important role in peacekeeping, humanitarian relief, and "out-of-area" operations

The focal point for this policy debate became Galileo, a joint program of the European Union (EU) and European Space Agency to develop an autonomous navigation satellite system. Galileo's civilian positioning, navigation, and timing capabilities were relatively non-controversial and seen by many experts as a valuable augmentation to the U.S. Global Positioning System. However, European plans for a dual-use "public regulated service" on Galileo raised more concerns about potential competition with GPS.

The controversy over Galileo reached its peak in December 2001, when U.S. Deputy Defense Secretary Paul Wolfowitz wrote to EU defense ministers expressing concerns about potential interference of Galileo's security signals with GPS military bands. Although this specific technical issue was resolved in a US-EU agreement signed in June 2004, the controversy also highlighted a growing divergence of views between the United States and EU regarding the role of space in supporting "security" missions and European reliance on American-run "global utilities."

As the decade progressed, concerns about a potential transatlantic rivalry in space abated as overall relations between the United States and Continental Europe improved and the EU Constitution was rejected in French and Dutch referendums. By early 2006, delays and cost overruns in the first phase of the Galileo program – combined with continuing controversies over China's role as a minority partner in the program – cooled the ardor of many European governments for large, dual-use projects.

By 2006, general pressures on government spending also suggested that a second space "flagship," the Global Monitoring for Environment and Security program, would be stretched out to fit tighter budgets. Although the EU Commission still sought to expand its role in space, these efforts were reoriented away from comprehensive European Space Policy and towards a more incremental "road map" that emphasizes interoperability and tighter integration into terrestrial homeland security missions.

The renewed interest in integrated capabilities also may create opportunities for a more Atlanticist approach to military space. One promising candidate for such integration could be Space Situational Awareness, where European space surveillance sensors and satellite monitoring capabilities could be integrated with U.S. military space networks to improve allied commanders' understanding of friendly as well as potentially hostile space activities. Transatlantic ties also could be strengthened through cooperation between the U.S. and UK on operationally responsive microsatellites derived from the TopSat demonstration.

Perhaps more significantly, European nations expressed a growing interest in measures for protecting their space infrastructures. These efforts – which include support for Russian and Chinese diplomatic initiatives for multilateral "transparency and confidence building measures" – challenge many of the Cold War Assumptions of U.S. policy for sharing space surveillance data. The result may be the creation of a "two-way street" for information sharing, thus extending the Security guarantees of the North Atlantic Treaty into outer space.