are processed, with dramatic increases in ground resolution. Once satellite-borne SAR becomes operational, the United States will have a high-resolution surveillance capability that can "see" through both darkness and cloud cover.

Verification of arms control treaties using space platforms is no longer limited to the American military satellite reconnaissance program. An increasing number of commercial satellites may enable other nations to independently monitor treaty compliance to some extent.[2] The best-known of these is the French SPOT ("satellite pour l'observation de la terre") launched in February 1986. This satellite has a 10 m resolution for black-and-white images and 20 m resolution in colour. Moreover, it can move its mirrors up to 27 degrees to the right or left, allowing it to produce stereoscopic images. SPOT is not the only independent commercial satellite to have entered earth orbit in recent years. Japan orbited an ocean satellite, the MOS-1, with a 50 m resolution in March 1987; the Soviet Union launched India's IRS-1 satellite (36 m resolution) in 1988; in September of that year, Israel launched its experimental OFFEQ-1.

One of the technical problems blocking the use of commercial satellites for arms control verification has been their relatively low ground resolution. However, the next generation of satellites planned for the early 1990s may overcome this problem. The Japanese ERS-1, with an anticipated 1992 launch-date, has a SAR with an 18 m resolution. Canada's Radarsat, planned for launch in 1994, will have a SAR with a resolution under 10 m.[3] Other countries, including Brazil, China and the United Kingdom, are also pursuing independent commercial satellite programs for the coming decade. Next-generation commercial satellites will have the technical capabilities to open space-based remote sensing for treaty verification to nations other than the United States and Soviet Union. The operational and political implications of this are the subject of continuing research and debate.

Aerial Surveillance

Several reconnaissance aircraft may have relevance to the CFE-verification role. The American U-2 was the first high-altitude strategic reconnaissance aircraft, introduced in 1956.[4] The present version, the U-2R, has a range of 5 000 km flying at a maximum speed of approximately 1 000 km per hour at 12 200 m (40 000 ft.), with an operational ceiling of 21 300 m (70 000 ft.). It carries a package of infrared spectrometers, optical cameras and side-looking airborne radar (SLAR). Although once the mainstay of the American strategic reconnaissance program, it has since been replaced in most tasks by the SR-71 Blackbird and/or reconnaissance satellites. However, it is still used to monitor some regions including Central America and the Carribean basin.

The SR-71 Blackbird began operations on 7 January 1966. It has a speed of Mach 4 at 38 100 m (125 000 ft.), and can film a 155 000 km^2 area every hour flying at an altitude of 25 900 m (85 000 ft.). It, too, carries a varied sensor package