

# U.S. Warfighters get Hands on RADARSAT Data

**A**mong the top clients of RADARSAT-1 and -2 data are U.S. military and intelligence agencies. The fact that Canada's satellite images are highly coveted by U.S. warfighters is evident in the corporate timeline of RADARSAT contracts which is juxtaposed below with major U.S.-led wars in which Canada was/is a leading member.

**Mar. 1, 1996:** "The Defense Mapping Agency requires procurement of RADARSAT imagery of the earth's surface... in digital and photographic form. Data shall be...in Fine Image Mode and 10 meter ground resolution."<sup>1</sup>

**Mar. 18, 1999:** The Electronic Systems Center at Hanscom AFB, announced it was seeking "to improve the Eagle Vision I synthetic aperture radar imagery processing time [to] reduce processing time for radar imagery [including] RADARSAT ... from the current 40 minutes to less than two minutes for a 50x50km scene."<sup>2</sup>

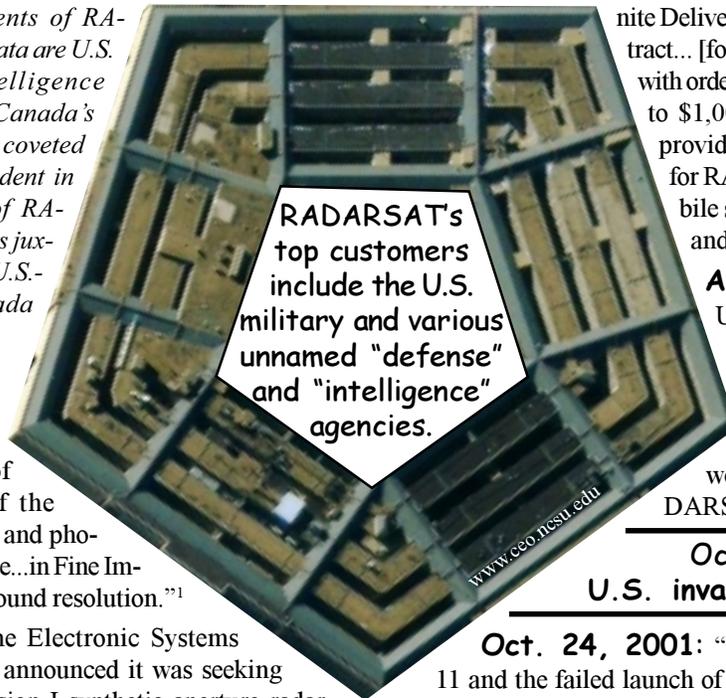
**March 24, 1999**  
**NATO begins aerial bombing of Yugoslavia.**

**May 15, 2000:** The ISR Integration Program Office, Hanscom AFB "wishes to identify potential sources...to process...satellite imagery. The system must be capable of ingesting ...RADARSAT sources."<sup>3</sup>

**Dec. 11, 2000:** "The USAF Research Laboratory announced ...it awarded Northrop Grumman...[US]\$688,888 for RADARSAT data collection."<sup>4</sup>

**Mar. 15, 2001:** The USAF's Information Exploitation Systems Program Office issued a "request for information" for a contract to "upgrade Eagle Vision through the addition of...RADARSAT 2 capabilities."<sup>5</sup>

**April 9, 2001:** NIMA began competition for an "Indefi-



nite Delivery, Indefinite Quantity contract... [for] RADARSAT-1 imagery" with orders to range from [US]\$1,500 to \$1,000,000. "Direct downlink providers shall provide services for RADARSAT-1 data to all mobile systems (...Eagle Vision...) and all fixed systems."<sup>6</sup>

**Aug. 23, 2001:** The USAF Research Lab. announced it had given Northrop Grumman, Electronic Sensors and Systems Div., "a contract worth [US]\$389,888 for RADARSAT data collection."<sup>7</sup>

**October 7, 2001**  
**U.S. invades Afghanistan.**

**Oct. 24, 2001:** "The tragic events of Sept. 11 and the failed launch of OrbView-4 ... are causing longer-term changes in the marketplace, including...in the priorities of some of our customers... The long-term also presents opportunities for our [i.e., MacDonald, Dettwiler and Assoc., MDA's] various intelligence, defence, surveillance, policing capabilities and information products."<sup>8</sup>

**Nov. 1, 2001:** "MDA announced... the completion of a 3-D terrain map covering Colombia, South America. The detailed country-wide Digital Elevation Model (DEM) is derived from images acquired by Canada's RADARSAT-1. Terrain heights are accurate to...30 metres. The Colombia DEM was initiated by...NIMA, an agency of the U.S. DoD... NIMA's mission is to support America's national security."<sup>9</sup>

**July 24, 2002:** NIMA gave MDA a 3-year contract of about \$8 million for "RADARSAT-1 data for 3-D mapping."<sup>10</sup>

**Nov. 5, 2002:** MDA reports a one-year, \$1.2 million contract that "enables the USAF to routinely receive RADARSAT-1 imagery" at three Eagle Vision stations."<sup>11</sup>

**Oct. 23, 2002:** MDA reported a "big win in Geographic Information Products,... over \$9.3 million in contracts" to provide "satellite imagery for defense and defense-related agencies in the U.S. and Europe."<sup>12</sup>

**Feb. 20, 2003:** MDA's "business with defence and defence-related agencies continued at a steady pace as we secured over \$10 million in contracts [for] geospatial information products from satellite imagery."<sup>13</sup>

**March 19, 2003**  
**U.S. declares war on Iraq.**

**Mar. 20, 2003:** The USAF Information Exploitation Systems Program Office issued a "solicitation notice" "to upgrade Eagle Vision through the addition of RADARSAT 2 satellite capabilities...for use in the combat commander's mission planning/rehearsal and intelligence gathering sys-

## Abbreviations:

<b>AFB</b>	Air Force Base
<b>DoD</b>	Department of Defense
<b>ISR</b>	Intelligence, Surveillance, Reconnaissance
<b>MDA</b>	MacDonald, Dettwiler & Assoc.
<b>NIMA</b>	National Imagery & Mapping Agency
<b>RSI</b>	RADARSAT International
<b>USAF</b>	United States Air Force

## "Defense"?

As usual, when reading documents from government, corporate or military sources, the term "defense" does not necessarily have anything to do with "defense." Rather, it means military or war-related.

**DMA→NIMA→NGIA:** U.S. "military intelligence" is a major user of RADARSAT. Initially called the Defense Mapping Agency, then NIMA and now NGIA, this self-described "major intelligence and combat support agency of the U.S. DoD" provides "timely, relevant and accurate geospatial intelligence in support of national security."

tems. The added RADARSAT 2 capability will allow Eagle Vision to program the satellite, receive and archive the telemetry, and process the data.... Total contract value is anticipated to be under [US]\$2 million.”<sup>14</sup>

**April 23, 2003:** “We [MDA] continued to book defence intelligence work worth \$3.8 million. We also completed an important order to provide the U.S. NIMA with a multi-level landcover database for more than 50% of the Earth. NIMA will use the new landcover information for a variety of logistical and planning purposes.”<sup>15</sup>

**July 24, 2003:** “MDA was awarded \$6.4 million in land information orders from Defense Intelligence customers.”<sup>16</sup>

**Sept. 23, 2003:** “MDA...has been awarded a contract worth several million dollars by the European Aeronautic Defence and Space [EADS] Co. to participate in the delivery of an additional mobile ground station to the U.S. government. The new EADS ground station will enable Eagle Vision to obtain information from Canada’s RADARSAT-1 satellite.... MDA President and CEO ...said [MDA]: ‘is continuing to make inroads into operational strategic U.S. defence projects, as we provide mission-critical systems to this growing market.’”<sup>17</sup>



Within weeks of the Iraq war’s onset, in March 2003, a U.S. military spy agency ordered RADARSAT data covering “*more than 50% of the Earth.*” MDA said the data, would fulfil “a variety of logistical and planning purposes.” MDA later divulged that 2003 was a “record year” for the “defence intelligence” aspect of their business, which received \$70 million in orders.

**Oct. 9, 2003:** Through the ISR Integration Program Office at Hanscom AFB, the USAF posted a “Solicitation Notice” to “upgrade the Eagle Vision Systems through the addition of a capability to directly receive... imagery from commercial satellite vendors [including] RADARSAT.... [One stipulation was] the ordering agency (Eagle Vision) cannot be disclosed to the public or associated with the imagery in the satellite vendor’s database or imagery catalogue.”<sup>18</sup>

**Oct. 24, 2003:** The USAF announced a sole source contract to MDA “to provide for the RADARSAT 2 upgrade to Eagle Vision.... The added RADARSAT 2 capability will allow Eagle Vision to program the satellite, receive and archive the telemetry, and process the data.”<sup>19</sup>

**3rd Quarter, 2003:** “The MDA Geographic Information Products Group made major breakthroughs in the Defence and Enforcement markets. MDA was awarded up to \$58 million in land information business by various defence intelligence customers.”<sup>20</sup>

**Feb. 17, 2004:** “In defence intelligence, we [MDA] had a record year [2003] with total orders of about \$70 million.”<sup>21</sup>

## March 1, 2004 U.S. and Canada occupy Haiti.

**June 2004:** The USAF gave a US\$2.1 contract to MDA to evaluate “the ability of the Canadian RADARSAT II...to provide all-weather imaging capability at 3-meter resolution for support of target detection..., homeland defense [and] moving target indicators...as an upgrade when integrated with the...Eagle Vision Deployable Satellite Imagery Receiving and Processing Station.”<sup>22</sup>

**June 23, 2004:** “MDA...has been awarded a competitive contract ...under the USAF Foreign Comparative Test program to evaluate RADARSAT-2 information reception

and processing capabilities to one of its Eagle Vision (EV) mobile ground stations. The first delivery will enable the USAF to test the use of RADARSAT-2 information to provide in-theatre support for the warfighter....

EV is the U.S. DoD’s only deployable commercial ground station capable of directly receiving and processing critical imagery information from commercial remote sensing satellites directly for the warfighter inside the battlefield rhythm. This dynamic system has been deployed in the theatre of operations in support of Operations Enduring Freedom, Iraqi Freedom and Global War on Terror missions. RADARSAT-2 will provide unclassified information...to support... mission planning and rehearsal, and time-critical targeting. RADARSAT-2...can aid in identifying a wide variety of surface features and targets....

This is [MDA’s] sixth EV contract. MDA’s EV ground station technology and...Flight Path Safety System are...deployed by the USAF at locations around the world.”<sup>23</sup>

**July 16, 2004:** An “existing [USAF-MDA] Eagle Vision/RADARSAT 2 contract...to modify the RADARSAT 2 satellite” was changed “in support of the RADARSAT Tandem Topographic Mission... [to] design, build and test two... antennas on RADARSAT 2 for frequency synchronization between RADARSAT 2 and the Tandem satellite.”<sup>24</sup>

**Oct. 6, 2004:** RADARSAT International (RSI) “has signed four contracts, worth a total of US\$2.35 million, with three longstanding defense clients....

The defense clients include two unnamed RADARSAT-1 network stations and a U.S. agency. The network station clients have signed downlink renewal agreements, and the U.S. agency has signed one contract for a mobile network station downlink renewal and another for a substantial volume of RADARSAT-1 data.

‘RADARSAT-1 data supports... geospatial intelligence needs such as mapping, 3-D terrain modeling, target detection and change in activity monitoring,’ said RSI president.”<sup>25</sup>

**Jan. 9, 2005:** The NGIA posted a “solicitation notice”

## U.S. Army Space and Missile Defense Command



for a "one-year [contract] extension... for the purchase of... RADARSAT-1 data, products and services to DoD and the Intelligence Community" for "Geophysical Surveying and Mapping Services."<sup>26</sup>

**Feb. 22, 2005:** "In the Defence market, MDA signed its second agreement to provide information solutions [to] allow image products to be distributed to commercial, defence and intelligence customers primarily in the U.S."<sup>27</sup>

**April 14, 2005:** The U.S. Army Space and Missile Defense Command, and Army Strategic Command, posted a "request for information" saying they required a "Multi-Sensor Virtual Ground Terminal... [that] enables

rapid access to commercial... satellite imagery data. This would include... sensors such as... Canadian RADARSAT [1] satellite. System needs... a small footprint to allow for flexible positioning for tactical forces around the world. System needs to be expandable to allow... new satellite sensors such as... Canadian SAR satellite RADARSAT 2. The system will allow the unit to request specific data or automatically receive compressed... imagery..., process the data within the area of operations,... [and] enable global coverage and imaging under all environmental and lighting conditions. Delivery of data must occur within 90 minutes of collect, preferably via direct downlink to an existing military mobile ground station."<sup>28</sup>

### References

1. "RADARSAT Fine Image Mode Imagery," *Commerce Business Daily (CBD)*, PSA#1542  
[www.fbodaily.com/CBD/archive/1996/03\(March\)/01-Mar-1996/99sol004.htm](http://www.fbodaily.com/CBD/archive/1996/03(March)/01-Mar-1996/99sol004.htm)
2. "Eagle Vision - Synthetic Aperture Radar Processor and Ocean Surveillance," *CBD*, PSA#2305  
[www.fbodaily.com/CBD/archive/1999/03\(March\)/18-Mar-1999/Ksol001.htm](http://www.fbodaily.com/CBD/archive/1999/03(March)/18-Mar-1999/Ksol001.htm)
3. "Eagle Vision Data Integration Segment," *CBD*, PSA#2600  
[www.fbodaily.com/CBD/archive/2000/05\(May\)/15-May-2000/Ksol003.htm](http://www.fbodaily.com/CBD/archive/2000/05(May)/15-May-2000/Ksol003.htm)
4. "C-Band Bistatic Data Collection Program for RADARSAT," *CBD*, PSA #2744  
[www.fbodaily.com/CBD/archive/2000/12\(December\)/11-Dec-2000/aawd003.htm](http://www.fbodaily.com/CBD/archive/2000/12(December)/11-Dec-2000/aawd003.htm)
5. "SPOT 5 & RADARSAT 2 Upgrade to Eagle Vision," *Federal Business Opportunities (FBO) Daily*  
[www.fbodaily.com/cbd/archive/2001/03\(March\)/15-Mar-2001/58sol002.htm](http://www.fbodaily.com/cbd/archive/2001/03(March)/15-Mar-2001/58sol002.htm)
6. "Books, Maps, And Other Publications," *CBD*, PSA #2825  
[www.fbodaily.com/CBD/archive/2001/04\(April\)/09-Apr-2001/76sol003.htm](http://www.fbodaily.com/CBD/archive/2001/04(April)/09-Apr-2001/76sol003.htm)
7. "C-Band Bistatic Data Collection with RADARSAT," *CBD*, PSA #2921  
[www.fbodaily.com/CBD/archive/2001/08\(August\)/23-Aug-2001/aawd005.htm](http://www.fbodaily.com/CBD/archive/2001/08(August)/23-Aug-2001/aawd005.htm)
8. MDA media release, "MDA Reports Solid Third Quarter."  
[www.mdacorporation.com/news/pr/pr2001102401.html](http://www.mdacorporation.com/news/pr/pr2001102401.html)
9. MDA media release, "MDA Delivers 3-D Map of Colombia to U.S. Government Mapping Agency."  
[www.mdacorporation.com/news/pr/pr2001110101.html](http://www.mdacorporation.com/news/pr/pr2001110101.html)
10. MDA media release, "MDA Records Highest Ever Quarterly Revenues - Net Earnings Up 33%."  
[mda.co.uk/investor/MDA\\_q2\\_2002\\_brochure.pdf](http://mda.co.uk/investor/MDA_q2_2002_brochure.pdf)
11. MDA media release, "USAF to Expand use of RADARSAT Data."
12. MDA media release, "2002 Third Quarter Results."  
[www.spaceref.com:16080/news/viewpr.html?pid=9610](http://www.spaceref.com:16080/news/viewpr.html?pid=9610)
13. MDA media release, "MDA Reports 2002 4th Quarter & Year-End Results."  
[www.mdacorporation.com/news/pr/pr2003022001.html](http://www.mdacorporation.com/news/pr/pr2003022001.html)
14. "RADARSAT 2 Upgrade to Eagle Vision," *FBO Daily*, #0475  
[www.fbodaily.com/archive/2003/03-March/20-Mar-2003/FBO-00282015.htm](http://www.fbodaily.com/archive/2003/03-March/20-Mar-2003/FBO-00282015.htm)
15. MDA media release, "First Quarter 2003 Results."  
[www.mdacorporation.com/news/pr/pr2003042301.html](http://www.mdacorporation.com/news/pr/pr2003042301.html)
16. MDA media release, "Second Quarter 2003 Results"  
[www.mdacorporation.com/news/pr/pr2003072401.html](http://www.mdacorporation.com/news/pr/pr2003072401.html)
17. MDA media release, "MDA to Participate in Provision of Military Ground Station."  
[www.directionsmag.com/press.releases/index.php?duty=Show&id=7912](http://www.directionsmag.com/press.releases/index.php?duty=Show&id=7912)
18. "Commercial Imagery Virtual Terminal to Support Eagle Vision Ground Station Operations," *FBO Daily* #0681  
[www.fbodaily.com/archive/2003/10-October/09-Oct-2003/FBO-00448807.htm](http://www.fbodaily.com/archive/2003/10-October/09-Oct-2003/FBO-00448807.htm)
19. "RADARSAT 2 CAPABILITIES," *FBO Daily*, #06960  
[www.fbodaily.com/archive/2003/10-October/24-Oct-2003/FBO-00457870.htm](http://www.fbodaily.com/archive/2003/10-October/24-Oct-2003/FBO-00457870.htm)
20. MDA Brochure, Third Quarter 2003  
[mda.co.uk/investor/MDA\\_q3\\_2003\\_brochure.pdf](http://mda.co.uk/investor/MDA_q3_2003_brochure.pdf)
21. MDA media release, "MDA Reports Year End & 4th Quarter 2003 Results."  
[www.mdacorporation.com/news/pr/pr2004021701.html](http://www.mdacorporation.com/news/pr/pr2004021701.html)
22. RDT&E Budget Item Justification, February 2005.  
[www.globalsecurity.org/military/library/budget/fy2006/dod/OSD\\_BA6.pdf](http://www.globalsecurity.org/military/library/budget/fy2006/dod/OSD_BA6.pdf)
23. MDA media release, "U.S. Air Force to Test RADARSAT-2 Information Provision to Warfighters."  
[www.mdacorporation.com/news/pr/pr2004062301.html](http://www.mdacorporation.com/news/pr/pr2004062301.html)
24. "RADARSAT II Downlink Reception and Processing Algorithms and Systems," *FBO Daily*, #0963  
[www.fbodaily.com/archive/2004/07-July/16-Jul-2004/FBO-00620845.htm](http://www.fbodaily.com/archive/2004/07-July/16-Jul-2004/FBO-00620845.htm)
25. MDA media release, "RADARSAT International Signs \$2.35 Million U.S. in Defense Contracts," *Directions*.  
[www.directionsmag.com/press.releases/index.php?duty=Show&id=10307](http://www.directionsmag.com/press.releases/index.php?duty=Show&id=10307)
26. "One Year Sole-source Extension of RadarSAT Contract for Commercial Imagery," *FBO Daily*, #1140  
[www.fbodaily.com/archive/2005/01-January/09-Jan-2005/FBO-00731790.htm](http://www.fbodaily.com/archive/2005/01-January/09-Jan-2005/FBO-00731790.htm)
27. MDA, "MDA Reports 4th Quarter & Year End 2004 Results."  
[www.mdacorporation.com/news/pr/pr2005022201.html](http://www.mdacorporation.com/news/pr/pr2005022201.html)
28. "Multi-Sensor Virtual Ground Terminal System for G2 SORC," *FBO Daily*, #1235  
[www.fbodaily.com/archive/2005/04-April/14-Apr-2005/FBO-00786824.htm](http://www.fbodaily.com/archive/2005/04-April/14-Apr-2005/FBO-00786824.htm)