

To the distinguished review panel,

Here is my informal perspective on the issue, as a Canadian Aerospace Engineer currently working in the US (as a contractor for JSC).

Canada's aerospace competitive advantages are many. Having studied at UTIAS in Toronto at the Space Flight Lab, I have seen first hand the competitive advantage that Canada has in terms of nanosatellites. Having been to several international small satellite workshops, and having visited other similar design centers such as the NASA Ames nanosatellite lab, it is clear that Canada's program is ahead. Not only does this give Canada a technical edge in this satellite class, it also gives it an international leadership role and recognition, as many countries with emerging space programs, such as Norway or Austria, are looking up to the Canadian space program.

Another important Canadian aerospace edge which should be maintained is in regards to remote sensing. Many Earth monitoring satellites are near the end of their useful life, and many planned US replacement satellites have either failed or been canceled. This will leave a huge service gap, in terms of Earth monitoring, climate control and weather prediction. The expertise and recognition gained from the RadarSat program, combined with the satellite design expertise positions Canada at a great advantage to tackle this serious problem. If approached wisely, not only would this promote science and technology research and development in Canada, it could be a very lucrative project.

We can't approach this topic without mentioning Robotics. Projects like the next generation Canadarm and on-orbit servicing are important and should be supported to maintain Canada's internationally known expertise in Robotics. Satellite re-servicing and de-orbiting is an increasingly important issue, as space debris is becoming more and more of an issue.

It is astonishing how much Canada can achieve in the space program with such a limited budget. It would be hard to find a better return on investment opportunity in Canada. But no matter how much is accomplished, the Canadian funding for its space program remains its number one weakness. Increasing the budget would allow scientists, entrepreneurs and aerospace engineer like myself to find work in Canada and help the economy. New companies would emerge and markets would form. Building a strong aerospace commercial environment should be the Space agencies number one priority, in order for the market to be self sustaining and independent of government funding. To achieve this, I propose the following strategies:

1. Encourage business opportunities in Canada through a more focused and competitive program for specific objectives, similar to the NASA Commercial Orbital Transportation Services (COTS) program for ISS cargo resupply. As with COTS, the governments role is to encourage competition for a specific technical goal, in which it can give guidance, direction and starting capital. In the US, the SpaceX company is the perfect example of how a program like COTS can help jump start a market. The same can be applied in Canada for the microsatellite industry, Earth monitoring and perhaps the emerging satellite reservicing market.
2. Work on opening the border with US aerospace companies to establish themselves in Canada, and vice-versa. Working with US law makers, revising the ITAR regulation such that such market exchanges are possible should be a high priority for CSA.
3. Continue and expand on the commercial-educational partnerships to link technical expertise with the scientific community. Extend this partnership on an international level, such that CSA could act as a hub for information and expertise sharing.