Summer 2022

IAF ENTERPRISE RISK MANAGEMENT COMMITTEE (ERMC)

1. Introduction

We had the pleasure to meet face to face after the two-year pandemic constrained us to meeting virtually. Keeping spirits high, we had a lively exchange regarding resilience plans to ensure business continuity in our various organizations.

The meeting gathered sixteen people, twelve on site and four online, and despite the time zone differences, US colleagues were able to join.

2. Latest Developments

The committee noted the high quality of abstracts received for the Technical Sessions (18 in total) and some future actions were set for our committee, namely:

a. Organizing a Special session to increase awareness in Risk Management among the IAF community.
b. Organize in between the two annual IAF gatherings, conferences, likely virtual, on specific focus themes dealing with Strategic Risk management.

The Committee will meet again in Paris at the IAC in September 2022 and will have the joy of welcoming four new members:

1. Elisabetta Nori, Chief Risk Officer at e-Geos SpA, Italy, and President of the Enterprise Risk Management International Network (ERMINe)
2. Sammy Kayali, Chief Financial & Risk Officer, Jet Propulsion Laboratory, USA
3. Dave M. Lengyel, PhD in Risk Management, Georges Washington University, USA
4. Toby Clark, Risk Manager in space Transportation Systems Directorate, ESA HQ, France

Last but not least, the Committee agreed to invite Paul Walker (St. John's University) to the IAC ERMC meeting as keynote speaker, to take us through his latest research outputs in ERM.

3. Highlights: Focus on Global Risks affecting European Launchers

Toby Clark, Risk Manager of the Space Transportation systems Directorate of ESA gave us a keynote speech with an overview of the latest challenges facing the Launcher's systems.

In Europe, the European Space Agency (ESA) is tasked by its Member States to develop launcher systems that guarantee access to space for European public institutions and private industry. Currently, the

exploitation of the successful Ariane 5 launcher is approaching its end in 2023, while the maiden flight of its successor, Ariane 6 is also foreseen in 2023. Simultaneously, the smaller launcher system Vega is undergoing a significant upgrade with the maiden flight of the new Vega-C launcher expected in mid-2022. While the development of public funded launcher systems is managed by ESA, the commercial exploitation of these systems is entrusted to Arianespace. In the past, additionally to the exploitation of Ariane 5, Arianespace has also marketed launches on Russian Soyuz vehicles from Russia via its subsidiary Starsem since 1996, and since 2011 it has also offered launches on Soyuz from Europe's Spaceport, the Guiana Space Centre.

Over the last two and a half years the European launcher sector, like all industrial sectors around the world, has had to cope with the effects of two major global events, namely the Covid-19 pandemic and the effects of the on-going war in Ukraine. From the perspective of risk management these events did not figure highly in risk assessments prior their occurrence. If they had been considered at all they would normally be considered as being so unlikely that there was little need to mitigate the risk and if they were to occur, they would be treated by a crisis management response. This is indeed what happened in both cases.

For the Covid-19 pandemic, ESA and the industry supporting European launcher activities had to rapidly adapt. ESA, and much of industry, had been for some years introducing office systems that permitted some flexibility for office-based staff to telework from time to time. This was not seen as a risk mitigation action for a global pandemic, but it did enable ESA and industry to react very quickly to transfer office-based working to remote teleworking. An important risk that arose from the start of the pandemic concerned the role of ESA to support European industry, and it was rapidly established that to provide as much assistance as possible to industry, ESA had to streamline and speed up its processes for verifying deliveries and making payments. This was successfully carried out via remote teleworking. In the end, while there were some delays to projects resulting from the Covid-19 pandemic, the impact of such delays has been kept to a minimum by the efforts of industry to keep manufacturing going during this difficult period.

The commencement of hostilities in Ukraine was also a crisis event that immediately led to identification and assessment of associated risks. For the European launcher sector these risks manifested in two main ways: the cessation of cooperation with Russia for the exploitation of Soyuz; and the procurement of essential parts for the upper stage of the Vega launcher from Ukraine.

Concerning the exploitation of Soyuz by Arianespace, there were five European institutional missions slated to be launched by Soyuz that had to be abandoned and transferred to other launchers, including the launch of two of Europe's Galileo satellites. The risk mitigation focusses on transferring these missions to Vega-C and Ariane 6 launchers, but this in turn depends on both of these launchers achieving successful maiden flights in 2022 and 2023 respectively. Indeed it could be said that risk mitigation for this event began some years ago with the decisions to develop Ariane 6 and Vega-C. The successful commencement of exploitation of these two launchers would probably have resulted in the phasing out of exploitation of Soyuz within a few years.

For the procurement of parts for the Vega upper stage, which clearly impacts the future exploitation of the Vega launcher, the risk mitigation has consisted of ensuring existing stocks of parts remain available, supporting the continued production of parts in Ukraine as possible, and seeking alternative sources from other European manufacturers.

These two globally significant events have underlined the importance of risk management, especially concerning how risk management has to be integrated into crisis management to provide a comprehensive response to potentially catastrophic events that previously were thought to have almost no probability of actually occurring.

Ariane 6 – credit ESA

Vega-C – credit ESA