VIA RAIL HIGH SPEED RAIL TRACK STANDARDS (CLASSES 1 TO 5 AND 6 TO 9)

Transit

THE CONTEXT

A dedicated passenger rail track within the Québec City – Toronto corridor is an important part of Canada's transportation system. Over the last two years, VIA has increased ridership and revenue, demonstrating the relevance of its service within the corridor. As the frequency of freight trains, commuter trains and VIA trains continues to climb, it has become increasingly difficult for VIA trains to maintain their on-time performance. The proposed dedicated VIA track, using a new, more efficient fleet, is expected to:

- Relieve congestion, particularly in and out of major urban centers,
- Boost economic development and benefits along the railway corridor,
- Deliver a safer rail infrastructure and a more sustainable rail transportation system,
- Maximize ridership and revenue potential of passenger routes where market demand warrants.

The dedicated tracks project would also allow the re-design of the current frequencies operating on the shared environment to better meet regional needs for increased service.

It will also permit VIA to design and maintain its track to higher classes of speed than what is currently stated by Transport Canada i.e. above Class 5.

DESCRIPTION

VIA Rail hired SYSTRA Canada to develop track maintenance standards for Canadian railways for high-speed lines (classes 6 to 9). Previously, SYSTRA Canada had developed VIA's track maintenance standards for classes 1 to 5 (speed up to 100 m/h) under which the team:

- Reviewed and analyzed VIA Rail's new engineering track standards for classes 1 to 5 to verify compliance with Transport Canada rules and guidelines, the International Union of Railways codes and industry best practice documents from organizations in North America such as the US Federal Railroad Administration, Canadian National, Canadian Pacific and AMTRAK;
- Established the qualification requirements and provided the appropriate training materials.

CONFIDENCE MOVES THE WORLD

CLIENT
VIA Rail

COUNTRY
Canada

OUR ROLE
Lead Consultant

START DATE
October 2017

END DATE
Ongoing

TYPE OF SERVICES
Technical study

SYSTRA CANADA

Projects: 17-075, 17-093

The work on the HSR standards (classes 6 to 9) comprises the following:

- Conduct a comparative study of North American standards and best practices (FRA, AREMA, Amtrak) and compare them to European standards (SNCF, UIC),
- Analyze any differences between European and North American Practice,
- Offer recommendations for reinforcing current FRA standards that will provide for safe high-speed passenger rail operations in Canada,
- Participate in workshops with Transport Canada to endorse proposed recommendations,
- Establish revised standards for classes 6 to 9,
- Finalize a Track Safety Rules (TSR) document that assembles all necessary standards for Canada,
- Support submission to Transport Canada.

In a process of continuous improvement and performance, the role of SYSTRA is to bring its expertise and experience to strengthen procedures to ensure the safety of passengers as well as workers in charge of the maintenance of the infrastructure.

CHALLENGES

The main challenge is to handle two different approaches to track safety and find a good compromise that respects North American methods but achieves optimum passenger safety at high operating speeds.

The introduction of high speed multiplies the risk factors. North American standards are reliable as they apply to existing low-speed operations. However, they quickly show their limits in a high-speed context where safety dimensions are paramount.

SYSTRA is actively engaged to integrate maintenance constraints into the operating phase and thus meet the safety and performance requirements.

MITIGATION MEASURES

European operators such as SNCF or North American operators like AMTRAK have their own working culture that has allowed them to develop their own working methods that are the result of extensive experience operating high-speed lines.

Combining the leadership of the SNCF on high-speed with the existing North American know-how is the key to the success of the project.