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Is ATO fashionable?

Recently, I have been asked by the President of the Swiss Railway Journalist Association to give a paper about why it is suddenly fashionable to aim for Automatic Train Operation (ATO), when the mainstream opinion used to declare it unreasonable, together with the technical progress which now makes the initiative possible.

I came up with an immediate answer for him: ATO, even Grade of Automation (GoA) 4, is not just technically possible, but the state of the art in metro and similar systems. He found this interesting, but not the answer he was looking for. Instead, he wanted to know why real railways, like Schweizerische Bundesbahnen (SBB), wanted ATO. I said, "*SBB is a main line railway, there things are slightly different*" and scratched my head. Then I explained to him the different GoAs. Again, he found this very interesting, but reminded me that I still owed the real answers to his questions.

The paper is now ready and includes the signal engineer's answers, technical progress in IT and telecommunication, continuous ATP, localisation and obstacle detection devices, to name a few. However, this is the least interesting part of the paper. The more interesting parts are: which ATO are we talking about, what are the goals, and what about 'the cow on the track'?

Regarding the first subject I found about a dozen different expressions in the Swiss news of the past months, all describing ATO. But which ATO? In this respect, the definitions of GoAs are very helpful to clarify the language, but no one has done it properly so far for the public.

On the second theme, I found the interesting citation "*Don't just automate something because you can, automate it because you should*"[1] criticising the backward approach of "*using human beings as safety nets or backups to computers*" in plane cockpits. If we don't aim at GoA3 – or leave ATO alone altogether – then we would go along the same route, running into those safety problems caused by bored pilots/drivers who are not alert when urgently needed.

Let's talk about the cow issue another time.

Much has been thought about the technical feasibility of ATO in main line railways, not enough about its goals and the implications on society. In my opinion, the latter is also part of our job!

Markus Montigel
Senior Vice President

1. Maria Konnikova, "The Hazards of Going on Autopilot", in The New Yorker, 4 September 2014

Cover story

Railway technology isn't all about capacity. For many long, thin lines, like Mount Isa line in Queensland Australia pictured on the cover of this month's IRSE NEWS, the business case for upgrade may well be based on the use of communication-based train control with very few visible lineside assets, with cloud computing at the core. Currently there is a mix of technologies along the route, in an environment that moves between extremes, sometimes being so hot that trains are stopped due to the risk of rail buckling, sometimes on a new alignment after a deluge of rain on black soil. The assets include rainfall monitors, video cameras monitoring river levels, rail temperature sensors, dragging equipment detectors, automatic train protection, fibre optic transmission, radio communications, hundreds of level crossings and yet hardly anything visible at ground level for the majority of the route.
Photo John Aitken.

In this issue

Recognising the current high levels of investment and innovation in Australasian rail, this month we feature a number of articles focusing on signalling and train control in this region.

Main articles

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From the IRSE sections

IRSE NEWS contact information can now be found on the rear inside cover.