

Development Plans for starting and experienced signalling engineering trainers

Introduction

The development plans for starting and experienced Signalling Engineering trainers below are the result of development activities and experiences collected from five countries (United Kingdom, Norway, Belgium, Germany and the Netherlands). Eleven trainers from the five countries exchanged ideas and experiences, and discussed best practices.

For the starting and the experienced signalling engineering trainer we have developed a roadmap, based on the best practices of five countries. In the annex we provide an overview of all the development activities. Notable activities are circled.

Initial development plan for starting trainers (first 12 months)

Activity	Explanation	More information
Railway course for trainers without a railway background	Several countries offer introductory courses	
Train the trainer programme	4-5 day didactical skills course including visit(s) by the trainer during a 'teaching' period	After the visit trainers will be certified for a period of 1-2 years
Personal action plan	Highlights the development needs (period 6-9 months)	Throughout this period they have a mentor (= experienced colleague/trainer)
Learning from one or more colleague(s) via classroom visits	2 visits: - As delegate - As observer	
Starting to deliver the course	Colleague observes and offers feedback	
Delivering in full		
Visit by team leader	Team leader offers feedback	Team leader signs approval (for delivering the course)
Annual meeting of all signalling engineering trainers		

Continuous learning plan for experienced trainers (after 12 months)

Activity	Explanation	More information
Development plan that includes didactical and pedagogical activities	Activities are optional and are chosen by the trainer and his line manager: A personal plan	Workshops: didactic methods, new learning approaches/methodologies
Didactical and pedagogical refresher course at the University of Applied Sciences		
Workplace visit(s)	1-5 days per year	
Visit supplier of signalling engineering equipment	Visit with the whole team	
Classroom observations	1x 2 years	
Didactic 'reminders' (mind triggers)	Didactical inspiration via Learning Management System	
InterVision groups	Gathering with trainers	Instructor meetings on a regular basis
Cross-learning	Possibility of joining fellow trainer in other section (e.g. Power Supply)	Exchange of two disciplines
Next education, the future of working and learning	New technology developments e.g. ERTMS, Virtual Reality, Augmented Reality + Artificial Intelligence are upcoming in the railway industry	

Annex

Initial Development plans (for new colleagues, trainers)

Netherlands	United Kingdom	Norway	Germany	Belgium
4 days Train the trainer, including classroom visit by a training consultant + certification	5 days Train the trainer, After 6 months, 5 more days (in accordance with a national curriculum)	Instructor should have formal pedagogic qualifications from college or similar	Train the trainer (4 x 3 days, /2 days in one year) + certification For non railway people – an extra ‘railway’ course!	Train the trainer (5 days)
	Personal action plan which highlights their development needs (period of 6 months)	Before approval, the instructor must conduct an observation period and a practical period.	Several visits by the team-leader	Introduction to the <i>didactic coaching trajectory</i> for new trainers: *Observing senior’s lessons * Teaching, supported by didactic coach <i>Semester 1:</i> *Independent teaching & 2 classroom observations by coach



				<p>*Feedback & personal action plan</p> <p><i>Semester 2:</i></p> <p>*Independent teaching & 2 classroom observations by coach</p> <p>*Feedback & personal action plan</p> <p>*Evaluation meeting with responsible Training Centre</p> <p>After year-one→ continuous guideline</p>
2 x sitting in the classroom (per subject) observing the colleague during teaching	Depending on their background, they then sit the course as a student	Trainer trained 1 st as delegate 2 nd as observer	Trainer trained: 1 st as delegate 2 nd as observer	
Starting to deliver the course (colleague is observing and delivering feedback)	Start to help deliver the course	High school (University of Applied Sciences): adult pedagogy course during 1 year		

Delivering in full	Eventually delivering in full			
Accompanied by a mentor throughout	Accompanied by a mentor throughout	Person responsible for the product is also its mentor		
	Signed off to deliver the course by their line manager	Expertise and requirements for competence are part of the performance appraisal every year		
	National meeting of all signalling engineering trainers, 2 x per year	National meeting of all signalling engineering trainers, every year	1 x 3-day meeting	

Continuous guideline (for experienced trainers)

Netherlands	United Kingdom	Norway	Germany	Belgium
There is a professional plan which includes many (>25) didactical and pedagogical activities; what to do is discussed in the performance appraisal every year (individual)	Leadership programme for team-leaders (awareness of competences, succession planning, talent pool) 15 days (optional)	All teachers must have technical certification of the signalling systems they teach (individual)	Didactical refresher, every 5 years 3 x 3 days 3 modules for everyone (basic) Certification: examiners are certified in accordance with DIN and ISO 17024 (examiners train drivers)	Didactic workshops and seminars. Themes 2016-17: didactic methods / e-learning / classroom management / brain-based safety / ... (group – juniors and seniors)
Didactical and pedagogical refresher course at the University of Applied Sciences (3 days per 2 years) (group)	S & T skills group meeting 3 or 4 x per year with all signalling engineering trainers (2 days), knowledge share, Standards Briefing (actual)	Instructor meetings on regular basis (items and themes and sometimes with external input) (actual)	Visit supplier (e.g. Siemens) with a team of trainers (1 week)	Classroom observations by didactic coach: * feedback & personal action plan * evaluation meeting with responsible Training Centre (individual)



				Summer classes (experience-based) (group – juniors) Didactic ‘reminders’ (mind-triggers) via e-learning (individual – seniors and juniors)
Intervision groups (gatherings with trainers) (actual)	2 x observations per year by team-leader, colleague or line manager (individual)	Neighbour learning (engineer and fitter, different levels), in training and informal (individual)	Next education on demand (individual)	Continuous / advanced trainer development courses (group – seniors)
Every two years classroom visit and feedback from training consultant or fellow trainer (individual)	ACC (annual capability conversation) discussion with line manager. Provide evidence of maintaining competences (continuous feedback) (individual) ; 2 classroom visits by manager		Workshops for trainers (100-150 people) 3 days per year: what’s new, decided by team and team-leader (actual)	
Internal refresher sessions (once a year) (actual)	PDP Professional Development Plan (individual)			
Workplace visits (individual)	CPD Continuous Professional Development,	2 weeks in practice (not mandatory)	Visit DB Netz (1 week)	

	including workplace visits (individual) Option: 2 weeks in practice (not mandatory)			
Cross-learning: Possibility of joining fellow trainer in other section (e.g. Power Supply) (peer learning)		Expertise and requirements for competence are part of the performance appraisal every year (individual)	Cross-learning, exchange of two disciplines, 3 days (group) (Rolling Stock, Troisdorf)	
Didactical Inspiration via Learning Management System	Lunch & learn			