



The HIGH school for RAM/LCC Manager



context:

RAM/LCC (Reliability, Availability, Maintainability, Life Cycle Costs) is becoming more important in railway tenders since they are becoming one of the decisive factors in the awarding of contracts.

Not achieving agreed RAM / LCC data is often contractually highly

penalized. The system integrators have long been committed to high-profile experts. Now smaller and medium-sized companies recognize also that

they must build up these competencies. Participants will learn the basics on the topic of RAM and LCC in a comprehensive form to introduce their own RAM / LCC processes, RAM / LCC calculation for the offers and

to conduct RAM / LCC data analysis, under guidance in a first project, if necessary. You will get familiar with the various concepts and procedures of the RAM / LCC requirements of IEC 62 278 (EN 50126). The model

includes criteria and conditions, and failure categories, failure scenarios for RAM and for LCC considerations as well as RAM / LCC data collection and data analysis to validate RAM/LCC commitments.

your trainer:

Andreas Kroenert

As usual in the IRIS Academy, we will share our best knowledge first hand with you! In line with our motto "The best for the bests in the Rail Industry", CC-Rail engaged Andreas Kroenert from the Siemens AG. Andreas Kroenert is working as a 'Senior Specialist Engineer RAM/LCC' for 20 years within the railway business. He has worked in numerous Siemens and Alstom railway vehicle projects throughout the entire life cycle starting with the offer preparation, subsequent design, construction and testing & commissioning phases through to the final operation and maintenance periods and he has participated in national and international committees for RAM/LCC and maintenance related standards and regulations.



objectives:

The aim of the course is to provide enough suggestions for improving your RAM/LCC business about the upcoming requirements of the railway sector and to make you familiar with all relevant RAM/LCC topics. Especially the next generation of the ISO/TS 22163 standard requires RAM/LCC knowledge with special attention to the FRACAS process. After the course, there should be sufficient best practices and solutions that can be seamlessly integrated into your daily business.

target group:

Managers from marketing/sales, engineering, project management, testing, commissioning, maintenance, quality management and internal IRIS auditors.

content:

Details can be reviewed by downloading the agenda and a preview of the training material (the topic of the reading sample is risk management) - links are on page 2. Specifically, we will elaborate on the following topics:

- 1) RAM introduction,
 - 2) normative requirements, IRIS requirements, EN 50126 and CLC/TR 50126-3 application guideline,
 - 3) RAM/LCC processes and procedures, organization for RAM/LCC, tools, previous bids and projects follow up, certification cycles, tender phase & design and demonstration phases, review, prediction,
 - 4) RAM/LCC Project Plan,
 - 5) Reliability, failures and faults, failure modes, failure categories, relevancy, system breakdown structure and identification of Line Replaceable Units (LRU), failure rate (unit, calculation), mission profile, reliability KPIs,
 - 6) Availability, up and down states, maintenance times relevant for RAM/LCC considerations,
 - 7) FMEA, FMECA, background, theory, use, review of supplier FMECA,
 - 8) Field data collection, data cleaning and analysis, lessons learned, introduction to FRACAS, root cause analysis and reliability growth,
 - 9) Maintainability and maintenance (corrective, preventive, predictive),
 - 10) RAM/LCC calculations using UNILIFE tool,
 - 11) RAM/LCC tools, Internet links and material for RAM/LCC use, commercial tools.
 - 12) many practical exercises and case studies from real life.
 - 13) workshops to exchange and discuss best practices from the railway industry.
- The course provides the essential RAM/LCC basics and deepens them in numerous practical examples and exercises; the participants are expected to have experience and knowledge in using Excel.

5 good reasons to choose us:

We invest a significant portion of our time in the different standardization bodies and so we always have the most up-to-date information. So we have more knowledge and background information from first hand than others.

We have huge experiences. Facing the operational reality every day, we are well positioned to come up with solutions that are already proven in practice. So we can equip you with real advantages over your competition.

We bring top experts together and so we promote the exchange of „BEST PRACTICES“ and networking.

Our offers make sense and generate added value. If you really want to understand the RAM/LCC requirements, its context and inter-correlation, then we invite you to share our knowledge with you. With us, you may save a lot of resources after the course, because you have understood how to tackle the matters during your introduction.

We train the “Champions League” and we are aware that we are not the cheapest, but we want to be the best. Nevertheless, overall, we provide the best value for money – fair and transparent.

key companies trained :



facts & downloads

language:	the lecture is presented in English	
duration and dates:	4 exciting and intensive days (24 seminar hours). The seminar dates you can find in the course table at	https://www.cc-rail.info/en/academy/
agenda:	Please download from our secure server to consider the start on the first day and the finish on the last day in your travel planning.	http://www.cc-rail.info/wp-content/uploads/2018/10/Agenda-for-RAMLCC-en-rev01.pdf
venue:	the exact address of the training venue is mentioned under "Details" in the course table at https://www.cc-rail.info/en/academy/ or it will be communicated by E-mail after your registration.	
seminar fee:	2.400 EUR for examination, extensive seminar papers, your certificate as well as the conference room & technology, drinks and lunch during the seminar. You will receive a pro forma invoice in advance for any internal orders. The official invoice will only be given if the course is guaranteed (latest 4 weeks before the start).	
discount rates:	when registering more than 2 persons of a company: 5%, and in case of 3 or more persons: 10%	
proof of performance:	after passing the exam, participants can receive the certificate as RAM/LCC MANAGER as well as a detailed proof of achievement. The certificates of the IRIS Academy serve as proof of IRIS knowledge for the next 3 years.	
seminar papers:	the language of seminar papers is English. Our extensive and didactically very well prepared training materials are always up to date. Our training materials are globally used by many companies as guidelines and benchmarks.	
handout sample:	please download from our secure server	http://www.cc-rail.info/wp-content/uploads/2018/10/RAMLCC-reading-sample.pdf
customer satisfaction	CC-Rail is the world's first and still the only provider of a comprehensive IRIS training concept that meets a wide variety of requirements, ranging from 2-day events to challenging 40-hour IRIS seminars. We have invested more than 1000 hours in all these seminar preparations and offer much more than just "assisted reading". The IRIS Academy has been the "HIGH SCHOOL" for managers in the railway industry since 2009. It is globally known and highly appreciated in the industry for its unique training standard according to its motto "only the best for the bests" as well as for its exceptional practical proximity. So far, more than 1500 managers from all continents have benefited from the seminars offered by the IRIS Academy. 98% of them rated our courses as "EXCELLENT" and recommend this to others. Hence you can look forward to a seminar that exceptional differs from all other events.	
inquiries:	please send an e-mail to info@cc-rail.com or register at	https://www.cc-rail.info/en/academy/
booking deadline:	Immediately after booking deadline, we must pay our reservations (travels, accommodation, conference arrangements, prints and your certificates). Therefore, it is very important for us that you sign up for the seminar as soon as possible in order to reach the economically required minimum number of participants. The booking deadline is usually 4 weeks before the start of the seminar. If the minimum number of participants will not be reached, unfortunately the seminar must be canceled. Therefore, please do not book your travel before you have received our official training invitation.	