



ANNUAL SAFETY REPORT

GREEK REGULATORY AUTHORITY FOR RAILWAYS



ρυθμιστική αρχή
σιδηροδρόμων

regulatory
authority
for railways



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1. INTRODUCTION

1.1 Purpose, scope and other addressees of the report

Article 18 of the Railway Safety Directive 2004/49/EU (RSD) and article 19 of the Directive 2016/798/EU requires National Safety Authorities (NSAs) to publish an annual safety report concerning their activities in the preceding year. This report covers Greek NSA's activities from 1 January to 31 December 2017. The information given through this report has the purpose to fulfil the requirements of Article 18 of RSD and to inform the different actors in the railway field on Member State level, as well as the other NSAs.

Until today the Reports have been produced in accordance with the Template "Annual safety Report ", version 1.2, date 05/09/2013. On 24/5/2018 ERA published a new "NSA annual report template version 1.0". The present Report is written by the Regulatory Authority for Railways (RAS), using the new template.

The scope of this report is the entire Greek railway system.

This report will be available to the:

- European Union Agency for Railways (ERA).
- Greek Ministry of Infrastructure & Transport /Department of Interoperability and Railway Safety.
- Railway Accident Investigation Body (NIB).
- active Railway Undertakings (RUs) TRAINOSE, STASY, RCLG and PEARL.
- Infrastructure Manager (IM) OSE.
- Entity in Charge of Maintenance (ECM) EESSTY.
- any interested party through RAS website <http://www.ras-el.gr>.

1.2 Main conclusions of the reporting year

The fact that negatively signaled 2017 was the **major railway accident** that occurred in May at the railway station Adedro which resulted in 3 fatalities and 6 seriously injured. Consequently, adversely affected all CSI's in safety performance in Greek railways.

The **main causes of railway accidents in the Greek** network are: a) no centralized traffic control in operation, b) problems in the signaling system, c) projects involving the construction of the New Double High-Speed Railway Line (Patra- Athens -Thessaloniki) not being completed, d) the massive migration crisis that Greece faces as the first host country. Many immigrants, while

trying to cross the country and reach the frontiers to Europe, are moving beside the railway tracks, or sheltering in railway installations, resulting in many accidents.

On the other hand, the good news regarding 2017, was **the entrance of two new RUs** to the Greek rail market. Rail Cargo Logistics Goldair & Piraeus Europe Asia Rail Logistics, both freight transport companies, have received their safety certificates from RAS and are ready to start providing rail transport services in 2018.

Furthermore, the completion of major railway network upgrade projects in Greece is expected in the coming months. In particular, the delivery of the new Double High-Speed Railway Line (Patra- Athens -Thessaloniki), with all the modern railway safety systems (centralized traffic control, ETCS, GSMR etc) which will reduce the majority of Passive Level Crossings is expected to minimize accidents and to gradually converge with European averages.

2. NSA SAFETY STRATEGY, PROGRAMS, INITIATIVES, ORGANIZATIONAL CHANGES

2.1. Strategy

The new Plenary of RAS has set the following goals for 2018;

- Draw up, approve and publish a **Strategy for Safety Performance Supervision**, for a three-year period, i.e. 2018 - 2020. Strategy adoption and publication, up to the end of 2018.
- Development and dissemination of the **safety culture and information** on the changes introduced by the 4th Railway Package in the fields of security and regulation. This will be achieved by organizing workshops in order to inform all stakeholders and their executives to embrace and develop the railway safety culture. The workshops will be organized in cooperation with ERA and the Greek Ministry of Infrastructure & Transport.

2.2. Programs

The Greek Ministry of Infrastructure & Transport approved the proposal of RAS to start reforming the railway safety regulatory framework, setting out as priority the Traffic Rule Book, issued by the national Infrastructure Manager. A relevant working group was established under the coordination of the Ministry and started working on this project at the end of 2017. Members of this group are representatives from the Ministry of Infrastructure & Transport, RAS, the IM, operating RUs and the Rolling Stock Maintenance Company (ECM). In accordance with the project schedule, the reform is expected to be completed until the end of 2018.

2.3. Initiatives

- RAS has decided to develop an integrated system for the recording and monitoring of railway incidents on the national rail network. The system at first, enables the extraction of detailed statistics on incidents in the national rail network. Secondly, RAS intends to draw conclusions on the overall safety of the national railway system, which it will be recorded in annual reports. Finally, actions will be taken for RAS by drafting and sending proposals for corrective / improvement actions to stakeholders and companies in the railway system. The first annual report will be ready at the end of 2018 for the period 2015-2017.
- RAS, in collaboration with OSE (IM), due to fatal incidents of underage students at various points of the national railway network and with a view to their elimination,

proposed to the Ministry of Education to organise an informational program on the prevention of accidents on the rail network entitled: "Safe student cohabitation with the railway network ".The program was developed by RAS executives and is aimed at pupils of the Elementary and Secondary Schools of the areas adjacent to the Railway Network.

2.4. Organizational changes

On July 2017 the Minister of Infrastructure & Transport appointed the new Plenary of RAS which has a five-year mandate. The new president is Mrs Ioanna Tsiaparikou, vice president Mr Konstantinos Georgopoulos and the plenary session consists of Mr Antonios Gakis, Mrs Parskevi Georgiou and Mrs Anastasia Asimakopoulou.

3. SAFETY PERFORMANCE

3.1 Detailed analysis of the latest recorded trends

Considering the CSIs reported from 2013 to 2017 the following trend analysis was conducted:

Number of significant accidents (at least 1 fatality or 1 seriously injured or damages more 150.000 € or more than 6 hours delay):

2013	2014	2015	2016	2017	2013-17 average
14	23	25	13	29	20.8

The total number of accidents in 2017 compared to the five-year average is significantly higher. The majority (18 accidents) are due to rolling stock in motion” and (6 accidents) “level crossings» while the corresponding figures for 2016 were only 10 and 1. The main causes of railway accidents in Greece are described in par. 1.2. Also, to the fact that immigrants, who do not know the language and cannot understand or read the warning signs, do not follow safety rules. A lot of them are sheltering in railway installations where there are many risks and when they are moving along the lines many accidents occurred.

Number of fatalities:

2013	2014	2015	2016	2017	2013-17 average
9	9	14	10	21	12.6

The total number of fatalities in 2017 compared to the five-year average has almost been doubled. The majority (thirteen fatalities) are from “rolling stock in motion” and four fatalities are from “level crossings”.

This increase in 2017 is partly justified by the serious accident in railway station Adedro (5/2017) with three fatalities and six seriously injured and big cost to rolling stock and infrastructure. Additionally, the problem with the immigrants still exists. In 2017 we had three immigrants’ fatalities from “rolling stock in motion”.

Number of suicides:

2013	2014	2015	2016	2017	2013-17 average
5	4	7	4	3	4.6

Since 2013 the number of suicides has remained relatively stable. Especially in 2017 the number of suicides is the smallest in the five-year period. Bearing in mind the financial crisis that has plagued Greece for the last 8 years, this is a very encouraging element.

Number of injuries:

2013	2014	2015	2016	2017	2013-17 average
6	11	11	4	15	9.4

The total number of injuries in 2017 compared to the five-year average is 60% higher and compared to the number in 2016 is three times higher. Six injuries are caused by “rolling stock in motion” and six by “derailments”.

The last six injuries were caused by the serious accident in railway station Adedro (5/2017) which we analyzed above. It is obvious that if it wasn't for the accident, the number of injuries would be the same as the five-year average.

Number of precursors to accidents:

2013	2014	2015	2016	2017	2013-17 average
160	140	134	127	126	137.4

The number of precursors to accidents for the five-year period is firmly downward, in contrast to all the other indicators we have examined so far.

Cost of significant accidents:

2013	2014	2015	2016	2017	2013-17 average
9,96	1,54	37,53	10,86	22,76	16,52

The value of “Economic impact of significant accidents” for the year 2017 compared to the five-year average is 28% higher and compared to 2016 has been doubled. However, the highest price within those five years is the number in 2015.

This increase in 2017 is mainly justified by the serious accident in railway station Adedro (5/2017) which, except the fatalities and injuries, had caused great damages to the rolling stock, infrastructure and to the building of the station.

Technical safety of infrastructure and its implementation, management of safety:

Number of level crossing by type:

	2013	2014	2015	2016	2017
Active	779	760	749	749	692
Passive	721	693	656	656	571
Total	1500	1453	1405	1405	1263

The significant reduction of the number of Passive level crossings in 2017, is due to the OSE's different way of measuring them so far. Until 2016 OSE also measured the level crossings in the network that was suspended. Since 2017 counts only the level crossings in the active network.

Anyway, there is an ongoing effort to reduce the passive level crossings and that would be achieved partly by the delivery of the new high-speed line, which has no level crossings only elevated crossings.

4. CERTIFICATION AND AUTHORISATION

4.1 Guidance

All information on the issuing, publication and possible update of guidance by the NSA on how to obtain Part A/B certificates and authorisations are available to any interested party through the website of the Ministry of Infrastructure and Transport;

<http://www.yme.gov.gr/?getwhat=1&oid=842&id=&tid=869>

Since October 2013, RAS has taken over the responsibilities of NSA in Greece and all the above-mentioned information is also available in RAS website:

<http://www.ras-el.gr/el/page/Safety>

4.2 Contacts with other NSAs

No requests from / to other NSAs asking for information on a Part A certificate have been sent during 2017 because there is no RU doing an international route between Greece and a neighbouring country. There were no outcomes of discussions of supervision results with other NSAs.

4.3 Status of Certifications and Authorizations

Up to 2016, RAS:

- Had issued an Authorization (EI 21 2015 001) on 13-5-2015 to OSE, the unique IM in Greece
- Had issued a Safety Certificate Part A (EI 11 2013 00001) and Part B (EI 12 2013 0001) on 31/12/2012 to the RU TRAINOSE (incumbent).
- Had issued a Safety Certificate Part A (EI 11 20160001/15-7-2016) and Part B (EI 12 20160001/15-7-2016) to the RU STASY.
- Had issued a Safety Certificate Part A (EI 11 2016 0002/30-9-2016) to the RU Rail Cargo Logistics Goldair (RCLG).
- Had issued a Safety Certificate Part A (EI 11 2016 0003/19-12-2016) to the RU PIRAEUS EUROPE ASIA LOGISTICS SA (PEARL).

During 2017, RAS:

- renewed the Safety Certificate Part A (EI 11 2017 0001) and Part B (EI 12 2017 0003) on 31/12/2017 to the RU TRAINOSE (incumbent).

- issued a Safety Certificate Part B (EI 12 2017 002) on 20/6/2017 to the RU Rail Cargo Logistics Goldair (RCLG).
- issued a Safety Certificate Part B (EI 11 201 002 on 9/11/2017 to the RU PIRAEUS EUROPE ASIA LOGISTICS SA (PEARL).

4.4 Exchange of information between the NSA and RU/IM.

- RUs or IMs can express opinions on issuing procedures/practices or to file complaints to RAS through its e-mail (info@ras-el.gr) or letter by mail.
- Also, RAS welcomes meetings with RUs or IMs representatives for any issue. During the Safety Certificate assessment period RAS consults with the applicant companies through meetings or emails and letters trying to solve as soon as possible problems or shortages.
- Afterwards during the supervision period RAS:
 - Has held many meetings and exchanged many letters and emails with OSE and TRAINOSE and the Safety Certificate applicants STASY, RCLG and PEARL.
 - Organises at least one predetermined surveillance meeting per year individually, the IM and RUs.
 - Organises a predetermined surveillance meeting per year, RUs and IM together, to exchange opinions about the Greek railway market.

5. SUPERVISION

5.1 Strategy and plan(s)

RAS has been entrusted with the tasks of NSA since October 2013.

Since 2017, an annual program of supervisory activities is being drawn up at the beginning of each year, according to regulation 1077/2012/EC. The annual program of 2017 was approved by RAS plenary. The annual program of supervisory activities includes audits, inspections and surveillance meetings for all railway companies and the infrastructure manager. As mentioned above there is at least one predetermined surveillance meeting per year with each separately, the IM and all the Rus and additionally one meeting with all the Rus and IM together to exchange views and opinions about safety and the Greek railway market.

5.2 Investigation of root causes of accidents according to Directive 2016/798/798 (art 9 par.3)

RAS guarantees that IM and Rus safety management systems include procedures to ensure that accidents, incidents, near misses and other dangerous occurrences are reported, investigated and analysed and the necessary preventative measures are taken. All these are recorded in the **annual safety reports that IM and RUs** send to RAS every year at the end of June.

Additionally, **RAS collects and analyses safety information's** from various sources and mainly from the reports / findings of the Incident and Accident Investigation Committees set up by the Infrastructure Manager and the RUs. When considers that it is necessary to intervene, addresses recommendations to make sure that all necessary security measures are taken (see next paragraph).

5.3 Supervision results

During the supervision activities, when an intervention is required because of safety deficiencies, RAS actively intervenes and requires the parties to take immediately concrete measures Where non-compliance with the recommendations is found, RAS invite the parties involved, in the hearing committee and if necessary impose penalties.

In 2017 RAS took the following actions:

- from June 2017 RAS asked TRAINOSE to send monthly speed recording data train logs. those data are checked and evaluated by RAS. The check showed overshoots at speed limits. Subsequently, RAS sent a letter to TRAINOSE pointing out the seriousness of the

issue and requested the application of the measures and sanctions provided in TRAINOSE regulation. Following RAS's actions, a reduction in overspeed' was found during next month's data check.

- concerning the serious accident in railway station Adedro (5/2017), RAS sent a letter to OSE in November 2017, noted that Larissa - Thessaloniki railway section has no centralized traffic control/signaling system in place which would prevent similar events happening and called for the acceleration of the procedures for the completion of the contracts which are in progress. Until the operation of the system, it proposed the placement of on-site traffic management staff.
- concerning electricity incidents of two young men from overhead electric lines. RAS has sent letters to OSE (IM) and GAIAOSE (keeper) in October 2017, pointing out that the common cause of these incidents was the fact that young people were climbing on wagons which were immobilized in railway stations and suffered electric shock. To avoid such incidents, RAS has proposed to OSE to post warning signs at stations especially where there are long-term wagons under underground overhead lines and to GAIAOSE to remove parked wagons.
- Concerning the three railway accidents (one of them with three fatalities) caused by traffic personnel mistakes, RAS asked OSE (IM) to be informed on the audit and the measures taken to prevent similar cases from happening (June 2017).
- Concerning the train derailments on the 6th track of railway station Eidomeni caused by poor infrastructure condition, RAS suggested to OSE to proceed to maintenance works and until then no trains should be allowed to cross it (June 2017).

6. CHANGES IN LEGISLATION

6.1 Railway Safety Directive /1/

1. Legislation in force transposing the RSD /1/
 - a) Directive 2004/49/EC was transposed in Greek Legislation by Presidential Decree 160/2007 “Harmonization of Greek legislation to the provisions of Directive 2004/49/EC of the European Parliament and the Council, about the safety of the European rail system, amending the Directive 95/18/EC of the Council concerning licenses of Railway Undertakings and the Directive 2001/14/EC of the Council concerning capacity allocation of railway infrastructure and the levying of charges for the use of railway infrastructure and safety certification”
 2. The status of the transposition of the amendments to the RSD /1/ at the end of the reporting year (table 1 of annex B).
 - b) Directive 2007/57/EC was transposed in Greek Legislation by Presidential Decree 104/2010 “Harmonization of Greek legislation to the provisions of Directive 2007/57/EC of the European Parliament and the Council, about the interoperability of the European rail system and of Directive 2009/131/EC amending of annex VII of Directive 2007/57/EC”
 - c) Directive 2008/110/EC and Directive 2009/149/EC was transposed in Greek Legislation by Presidential Decree 71/2010 “Modification of PD 160/2007 for the adjustment of Greek legislation to the provisions of Directive 2008/110 / EC of the European Parliament and the Council of 16 December 2008 amending Directive 2004/49 / EC safety on the Community's railways (EE L 345/62 23.12.2008) and Directive 2009/149 / EC of 27 November 2009 amending Directive 2004/49 / EC of the European Parliament and of the Council as regards Common safety Indicators and common methods calculate accident costs (EE L 313/65 28.11.2009). ”
 - d) Directive 2014/88/EC was transposed in Greek Legislation by Ministerial Decision ΑΣ4.1/60964/3095/19-11-2015 “Harmonization of Greek legislation to the provisions of Directive 2014/88/EC of the European Parliament and the Council, amending Directive 2004/49/EC of the European Parliament and of the Council as regards common safety indicators and common methods of calculating accident costs”.

6.2 Ghanges in legislation and regulation

See table 2 of annex B.

7. SAFETY CULTURE

RAS is undertaking the below mentioned initiatives which contribute to the development of a positive culture:

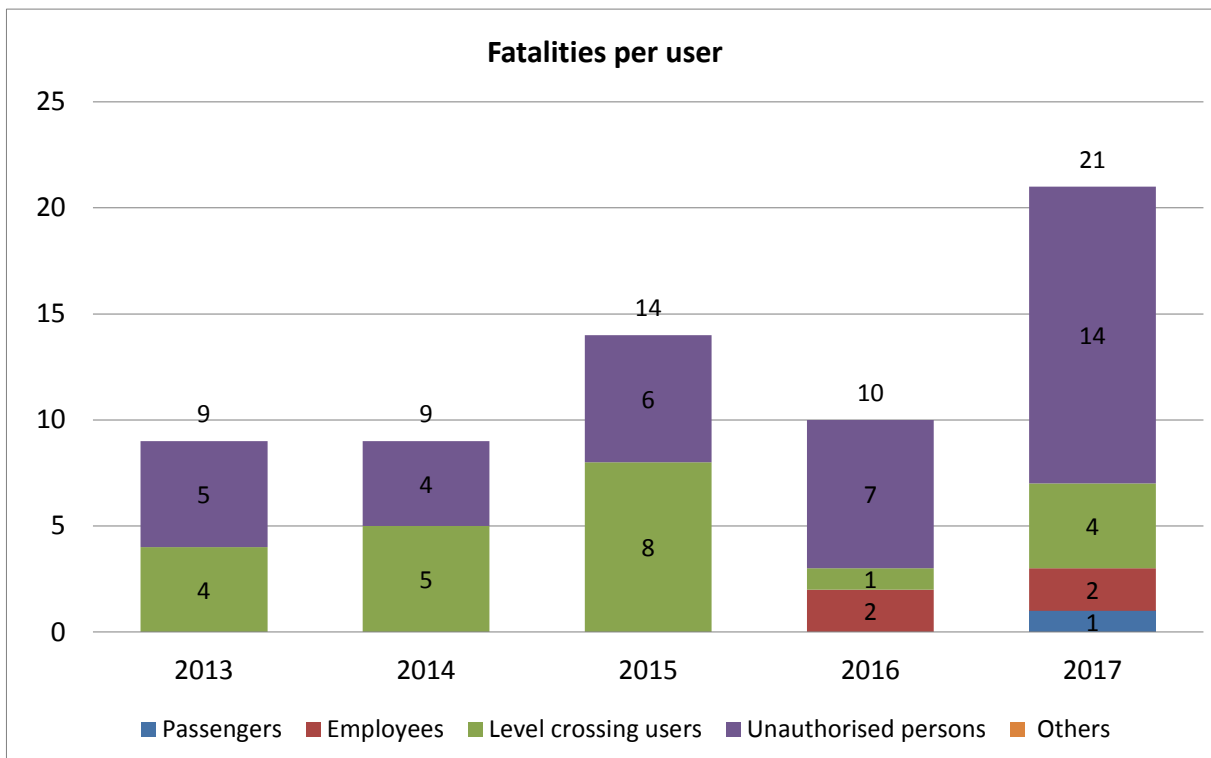
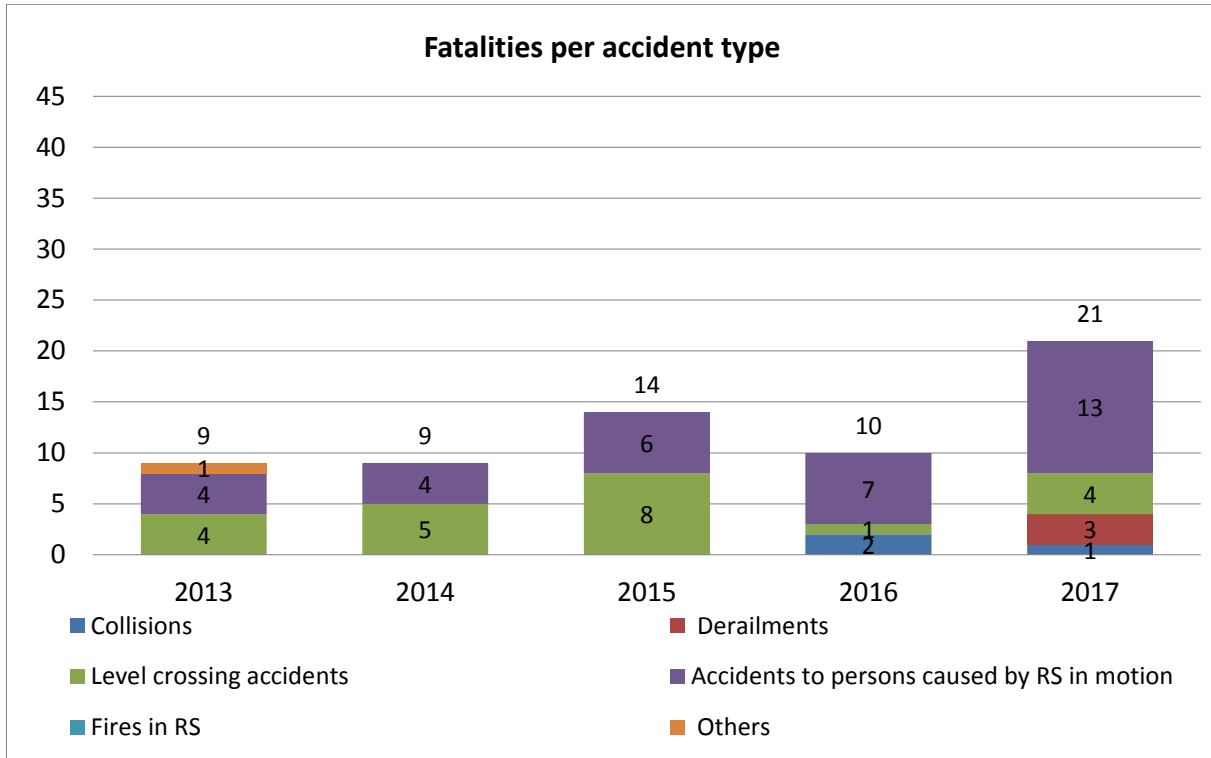
- to organize workshops (in 2018) with the aim of informing all stakeholders and their executives on the changes introduced by the 4th Railway Package in the fields of safety and regulation. The workshops will be organized in cooperation with ERA and the Greek Ministry of Infrastructure & Transport.
- to develop an integrated system for the recording and monitoring of railway incidents on the national rail network. The system requires the creation of a database which will, firstly, enable the extraction of detailed statistics on incidents on the national rail network. Secondly, RAS intends to draw conclusions on the overall safety of the national railway system, which it will record in annual reports. Finally, actions will be taken for RAS by drafting and sending proposals for corrective / improvement actions to stakeholders and companies in the railway system. The first annual report will be ready at the end of 2018 for the period 2015-2017.
- to organise, in collaboration with OSE (IM), an informational program on the prevention of accidents in the Railway Network entitled: "Safe student cohabitation with the railway network". The program was developed by RAS executives and is aimed at pupils of the Elementary and Secondary Schools of the areas adjacent to the Railway Network.

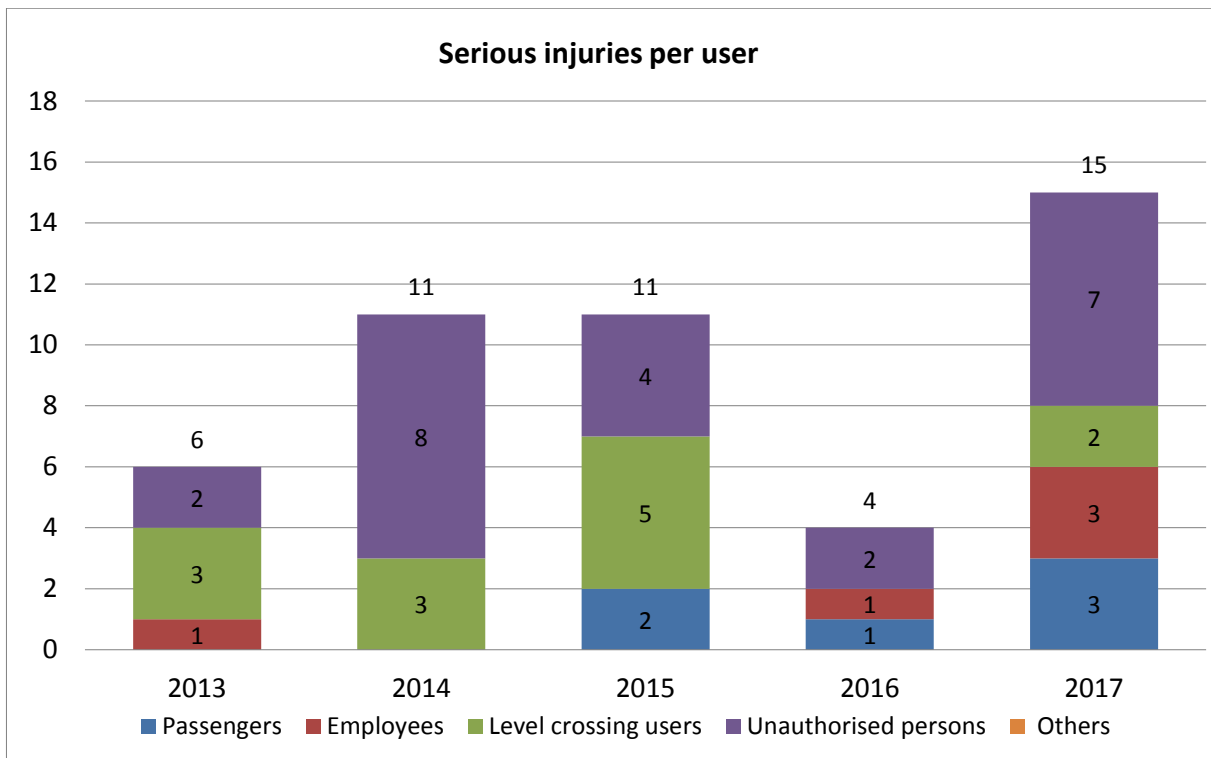
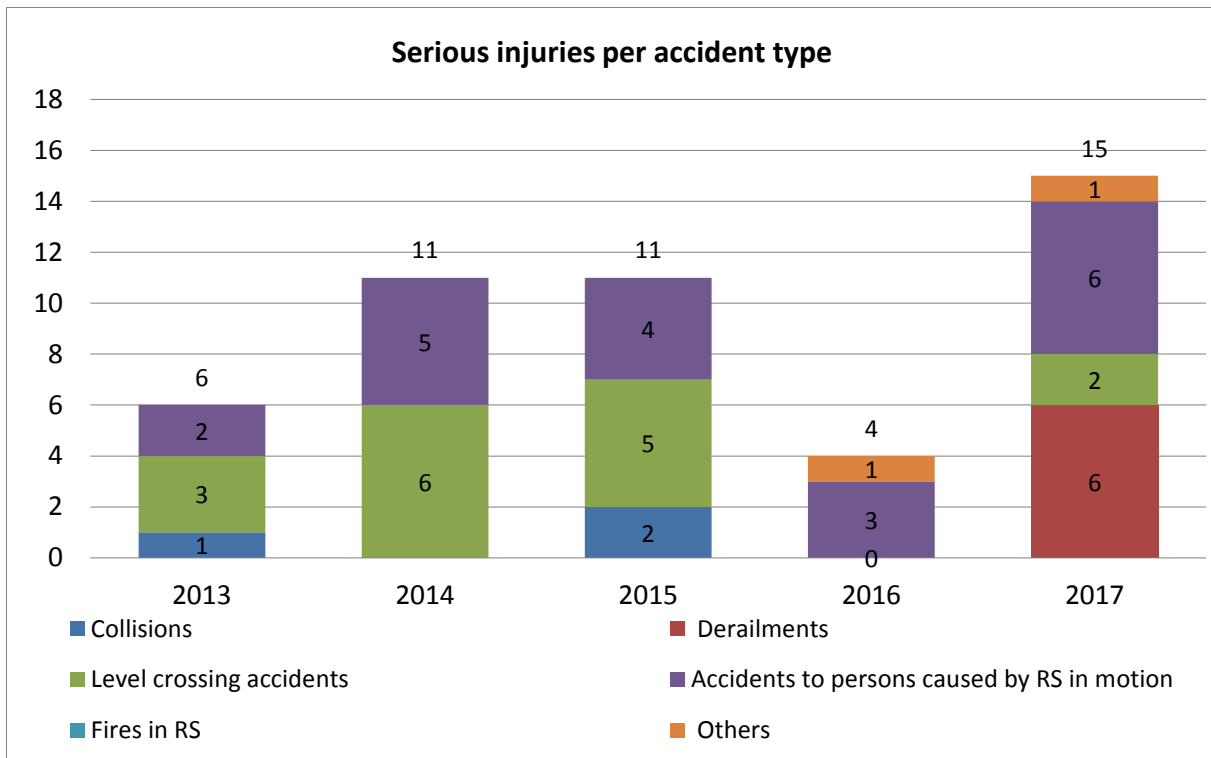
ANNEX A

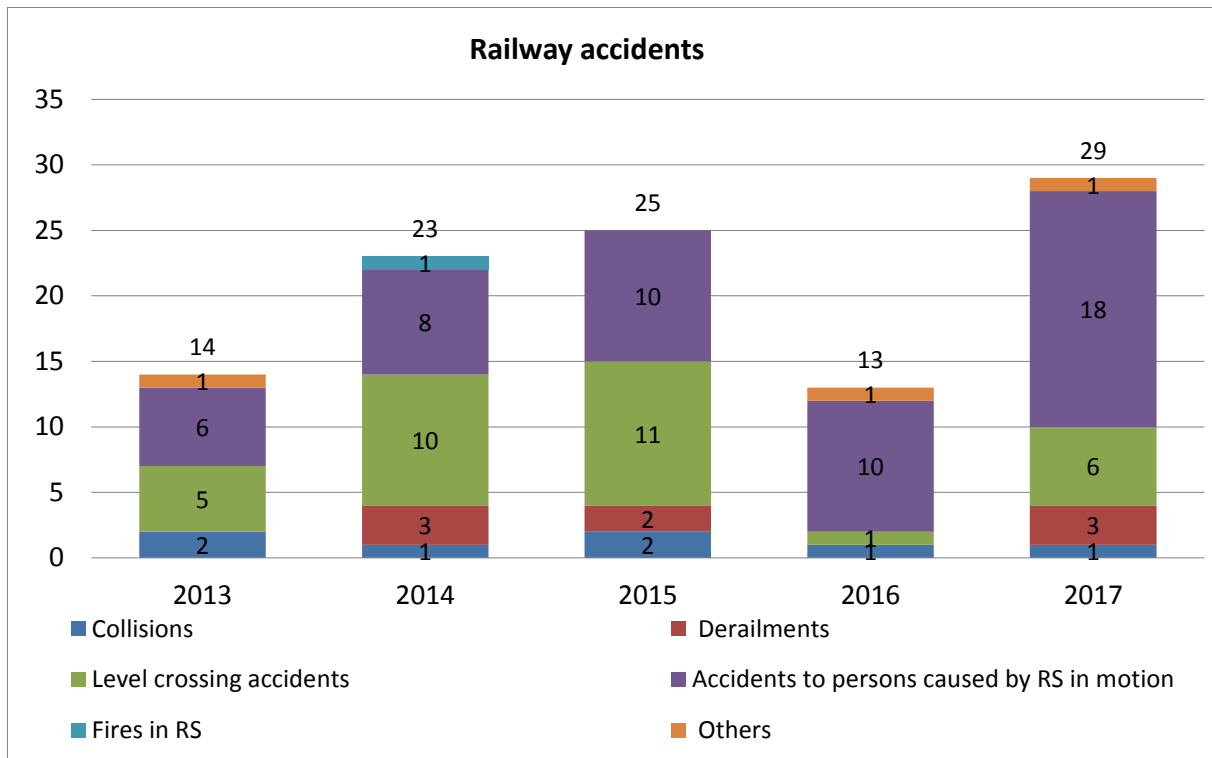
COMMON SAFETY INDICATORS

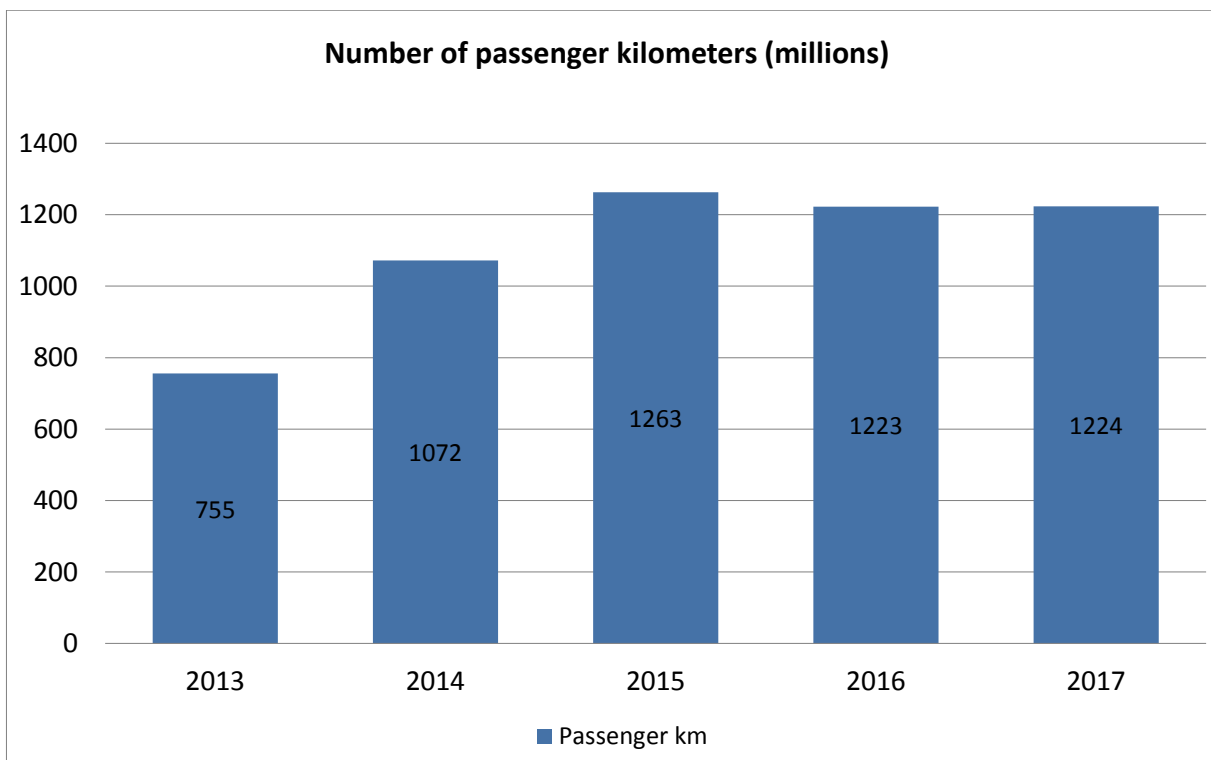
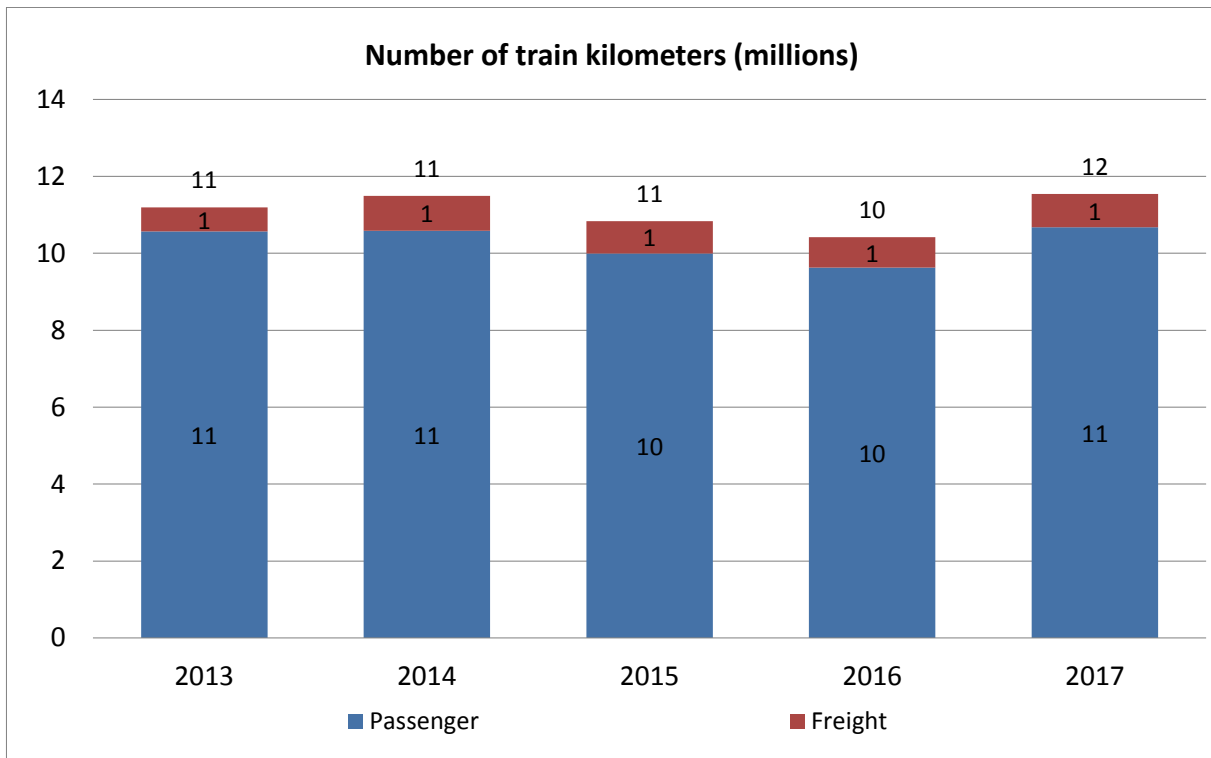
CSIs data charts

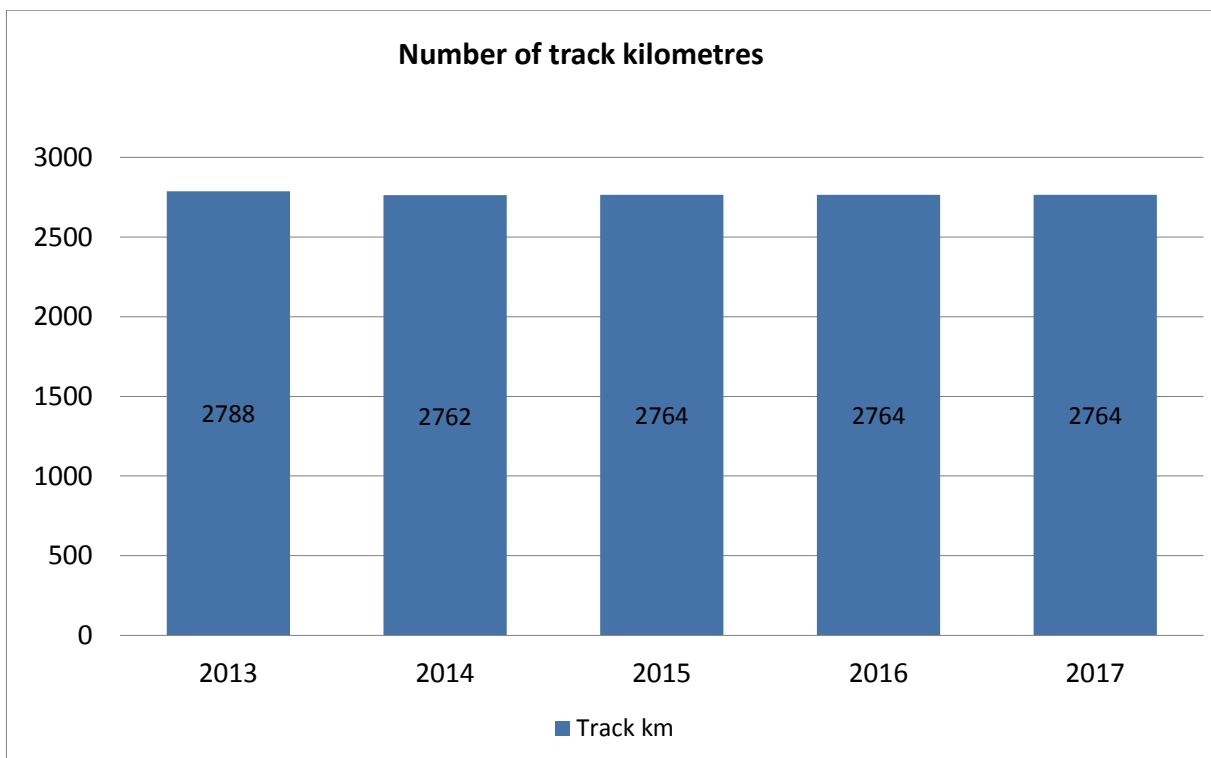
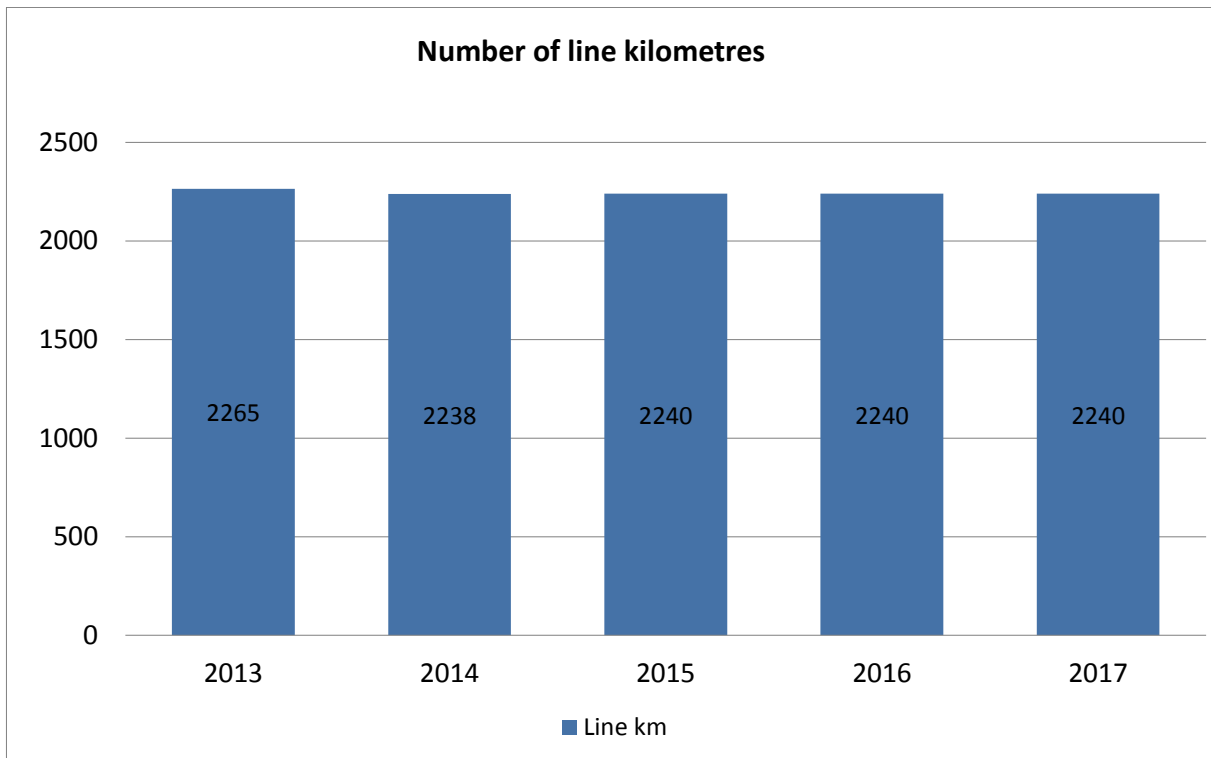
NSAs may use a predefined set of CSIs charts that may be downloaded from ERAIL system.

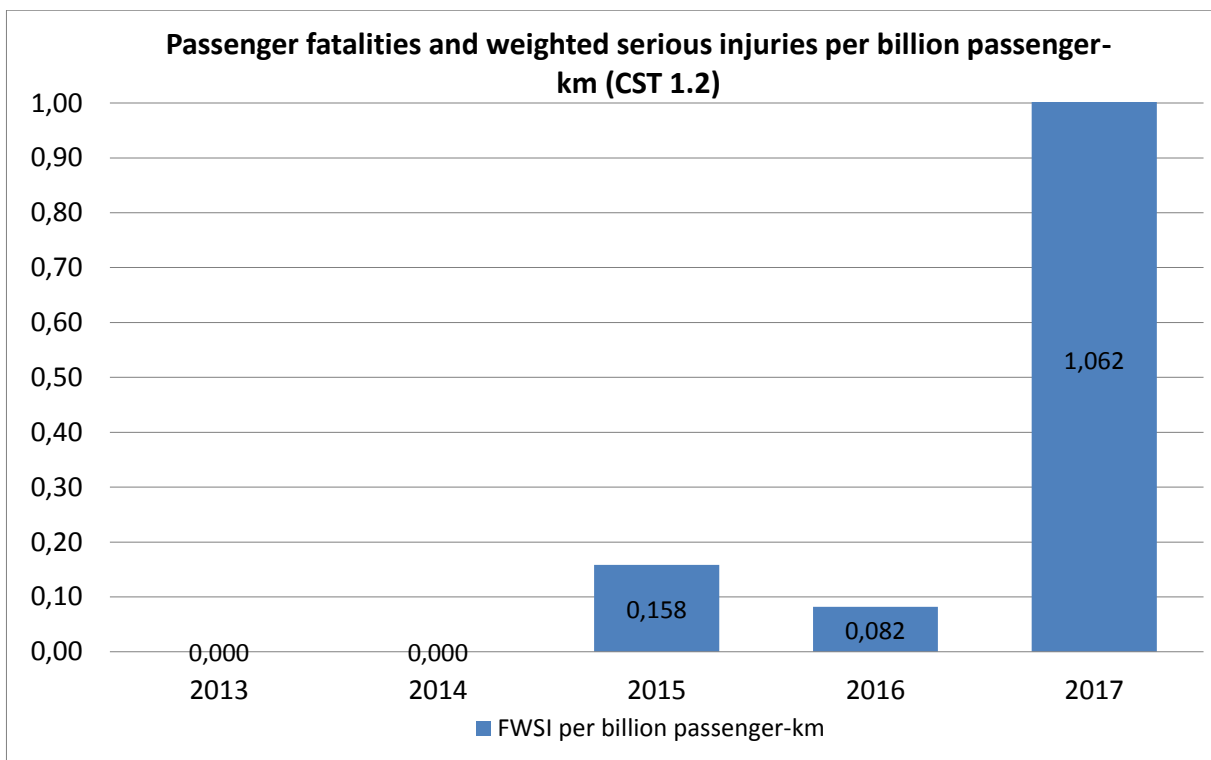
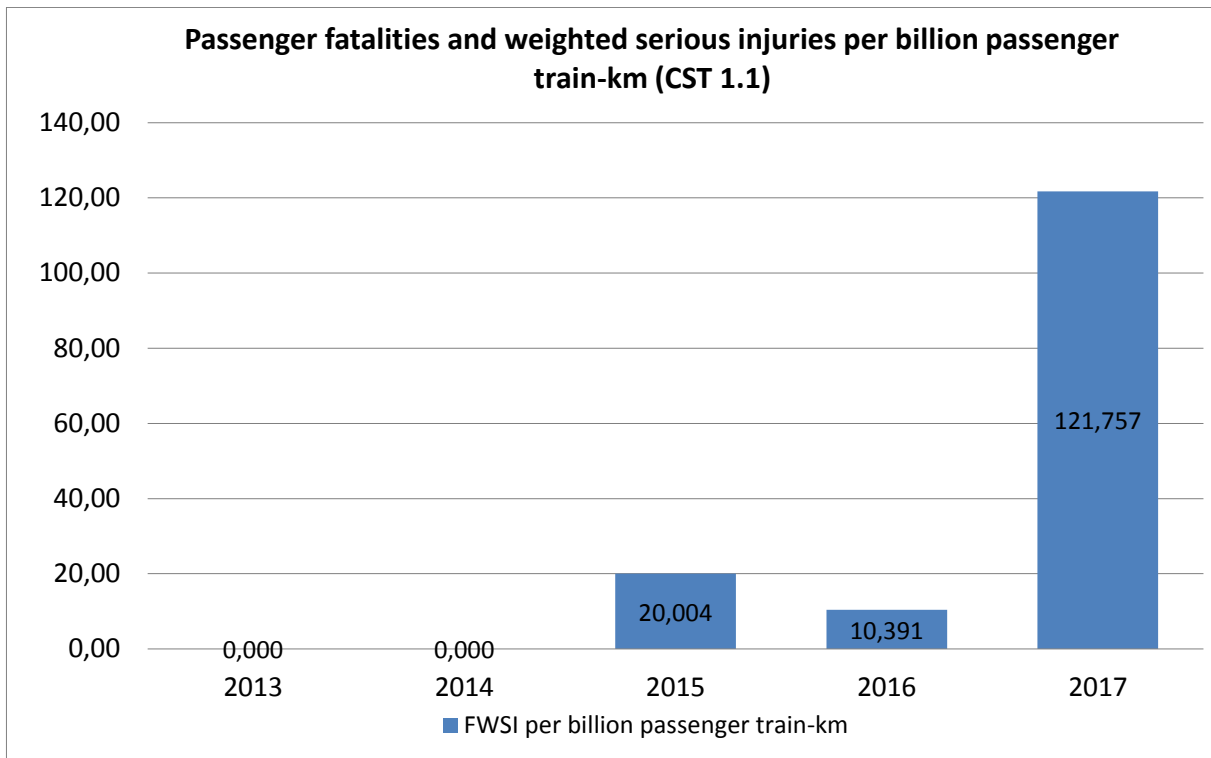


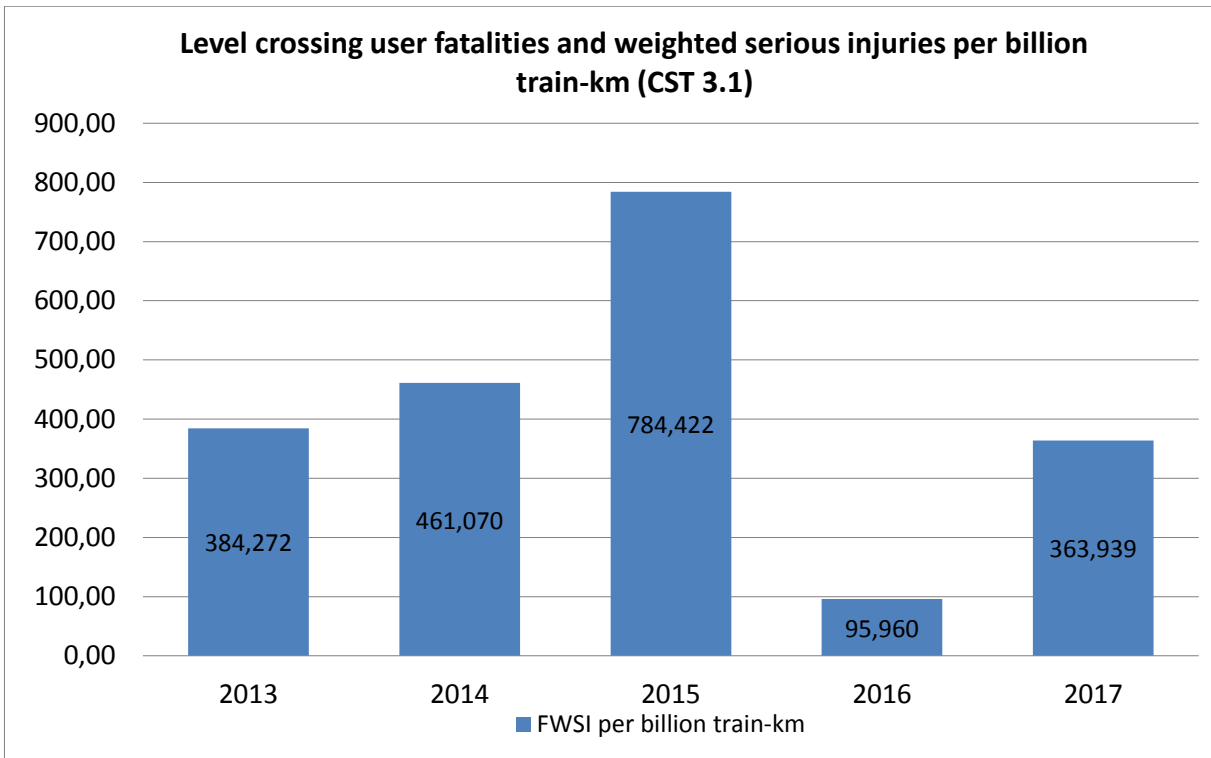
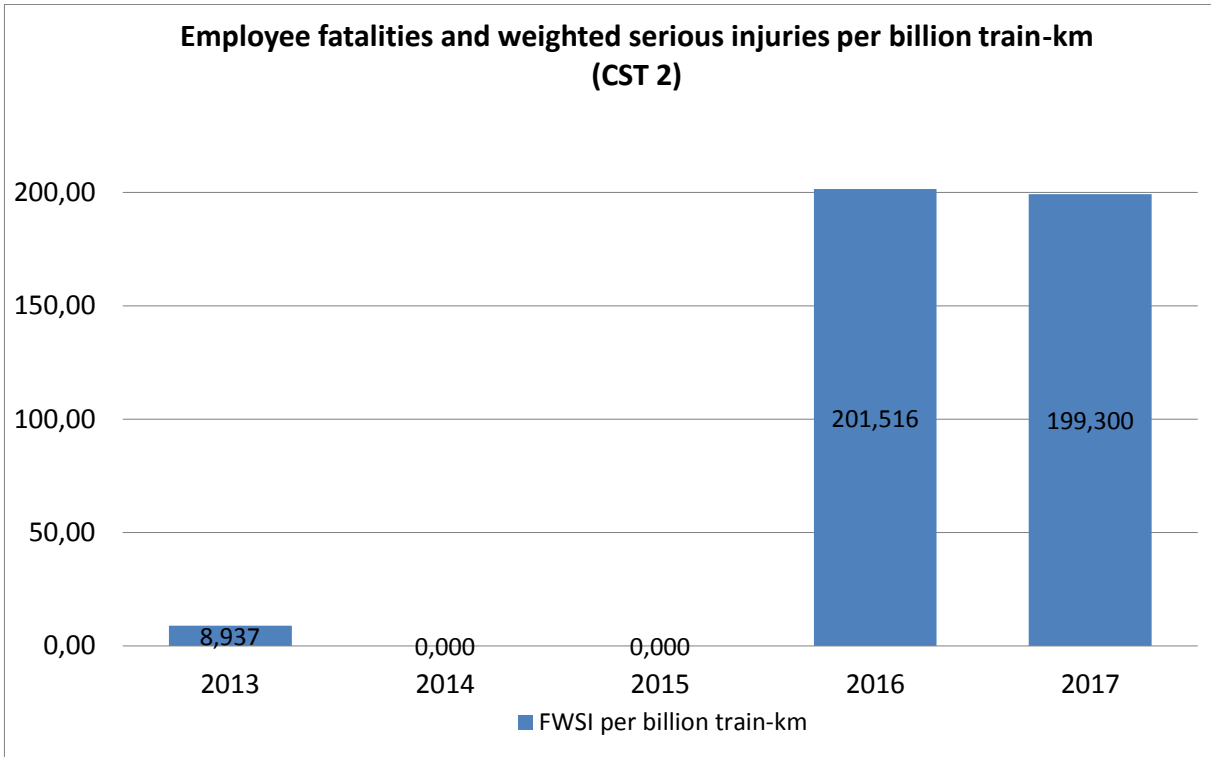


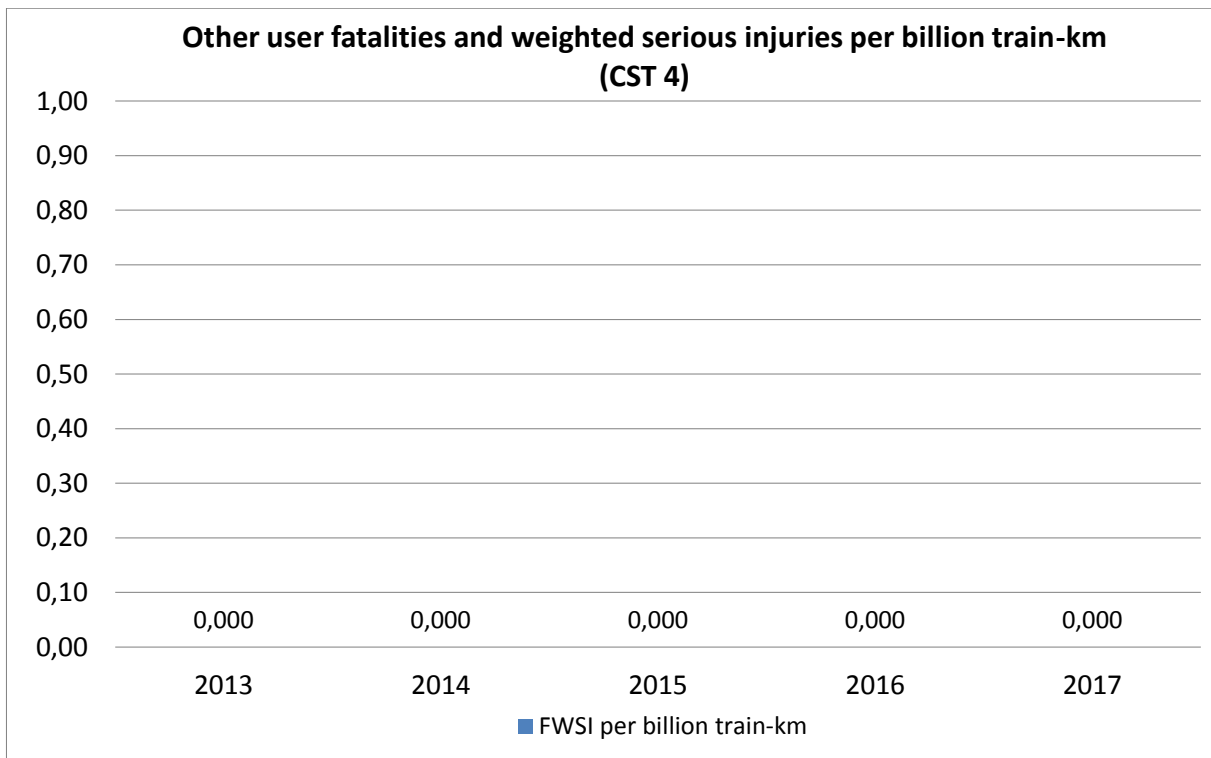
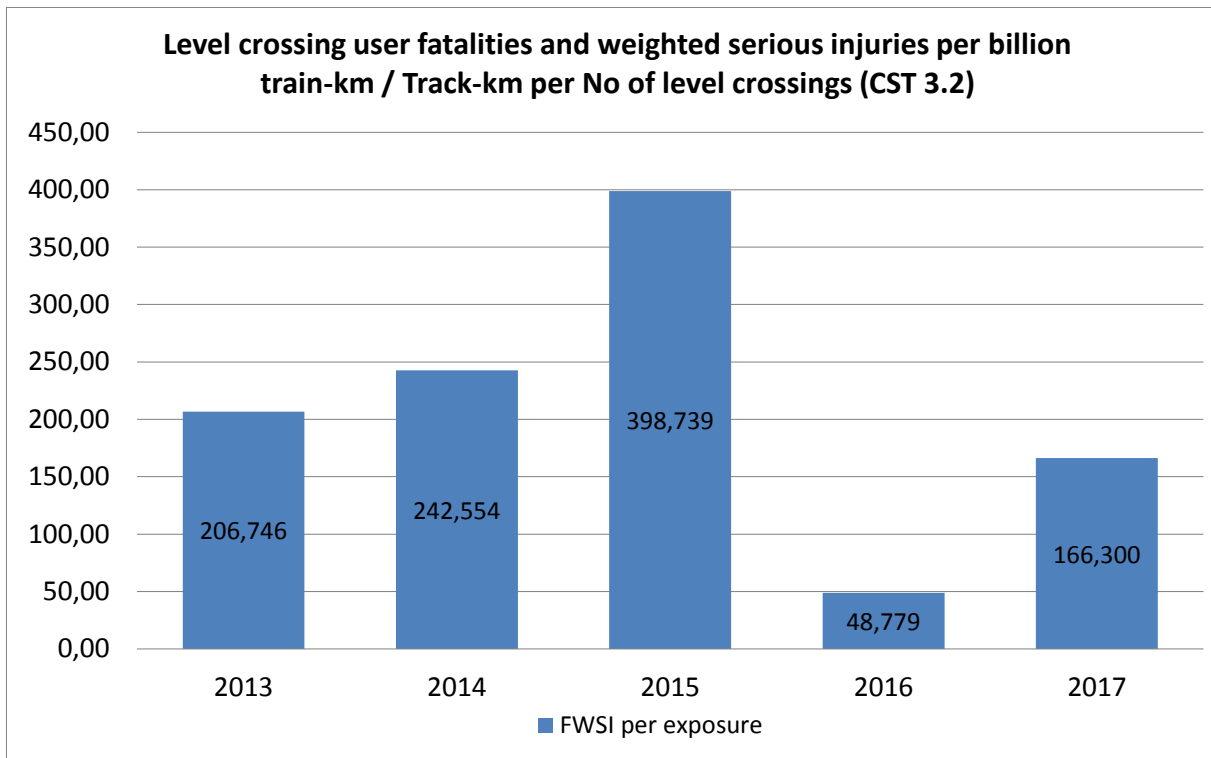


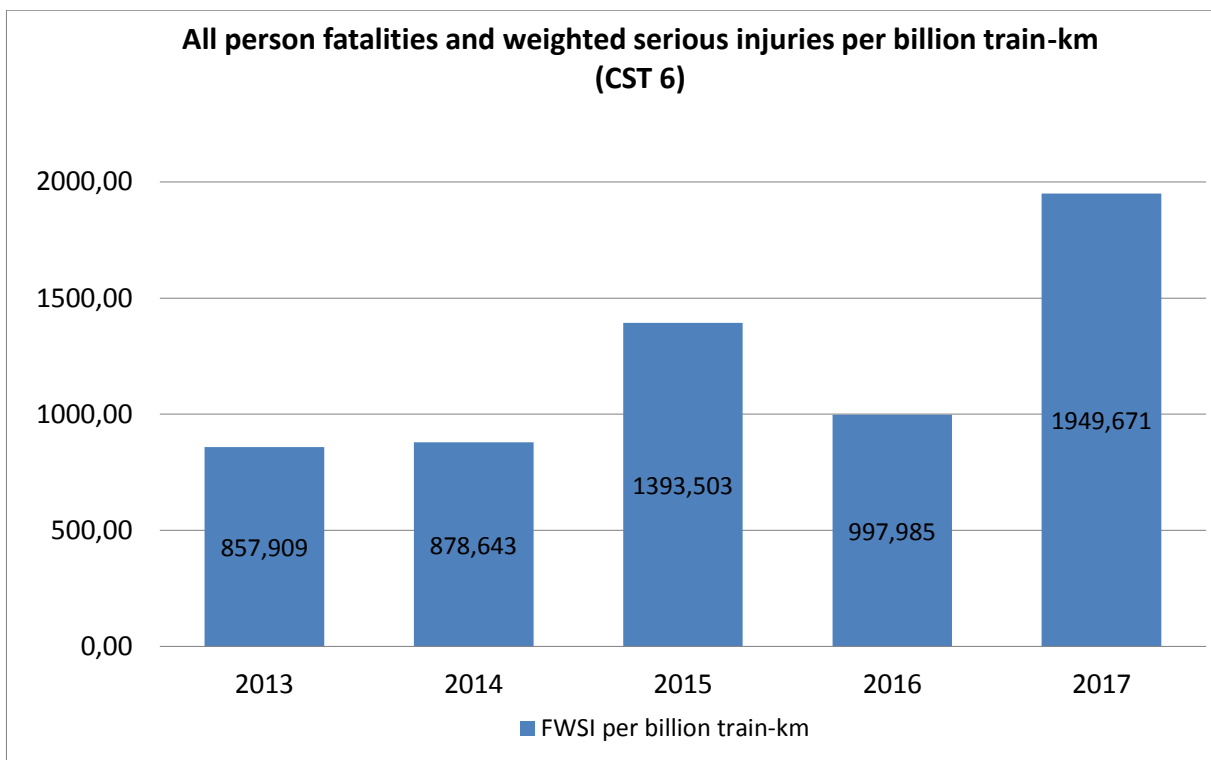
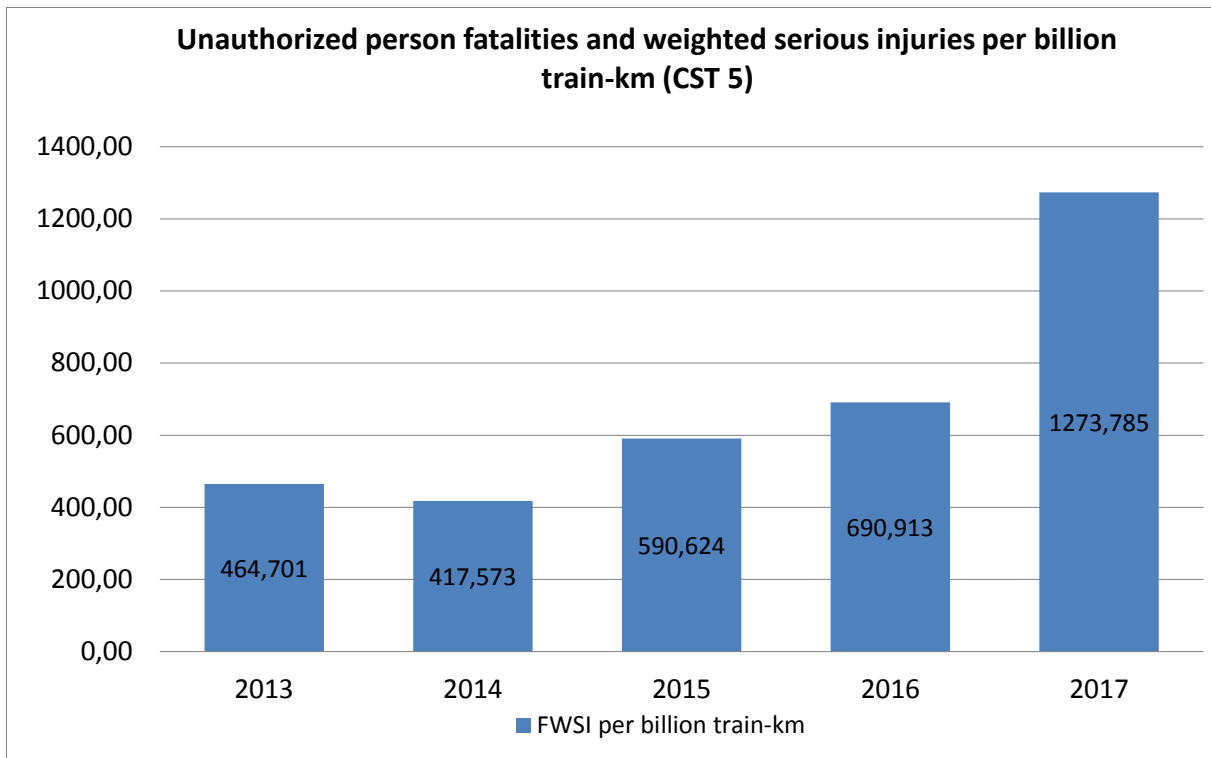


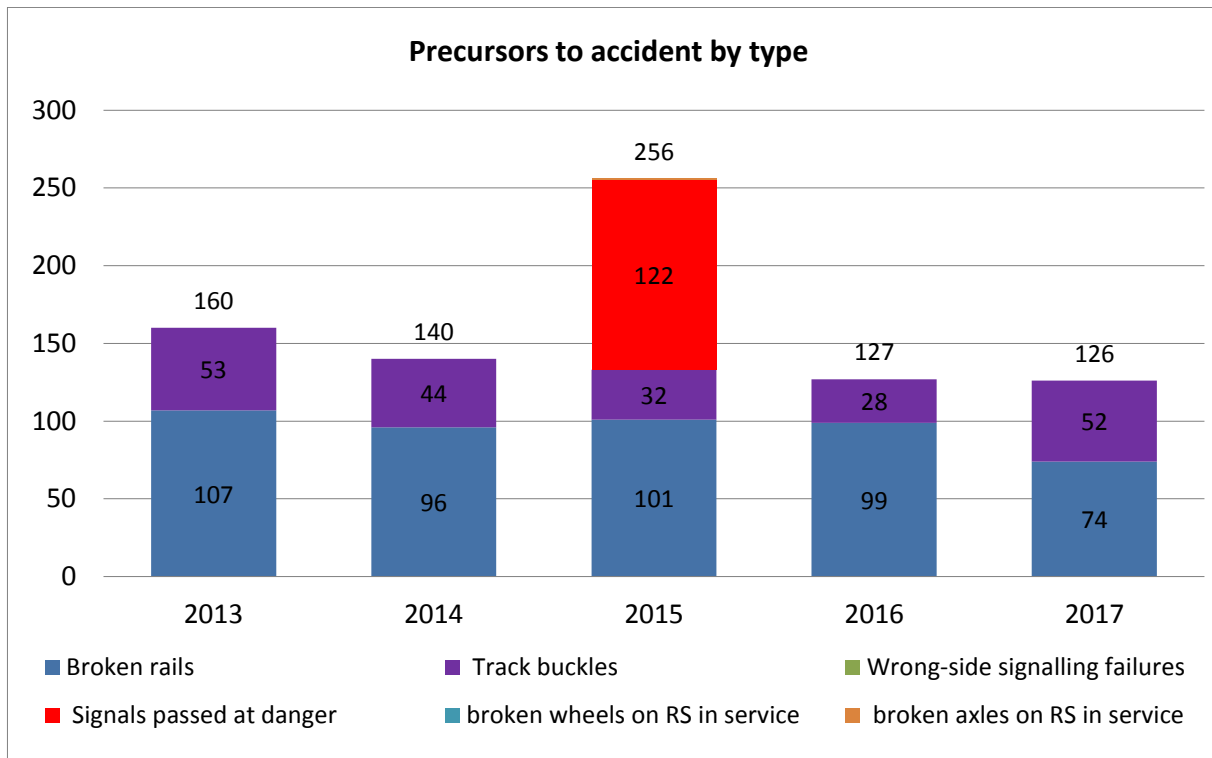


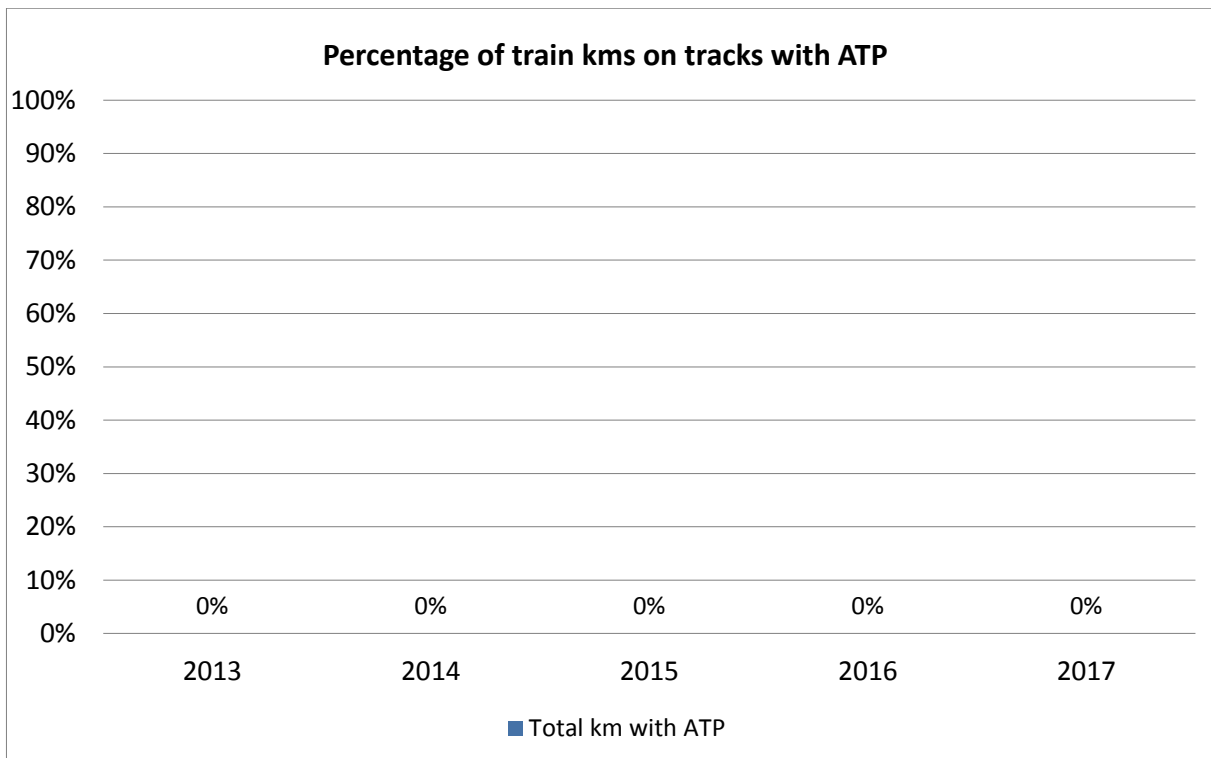
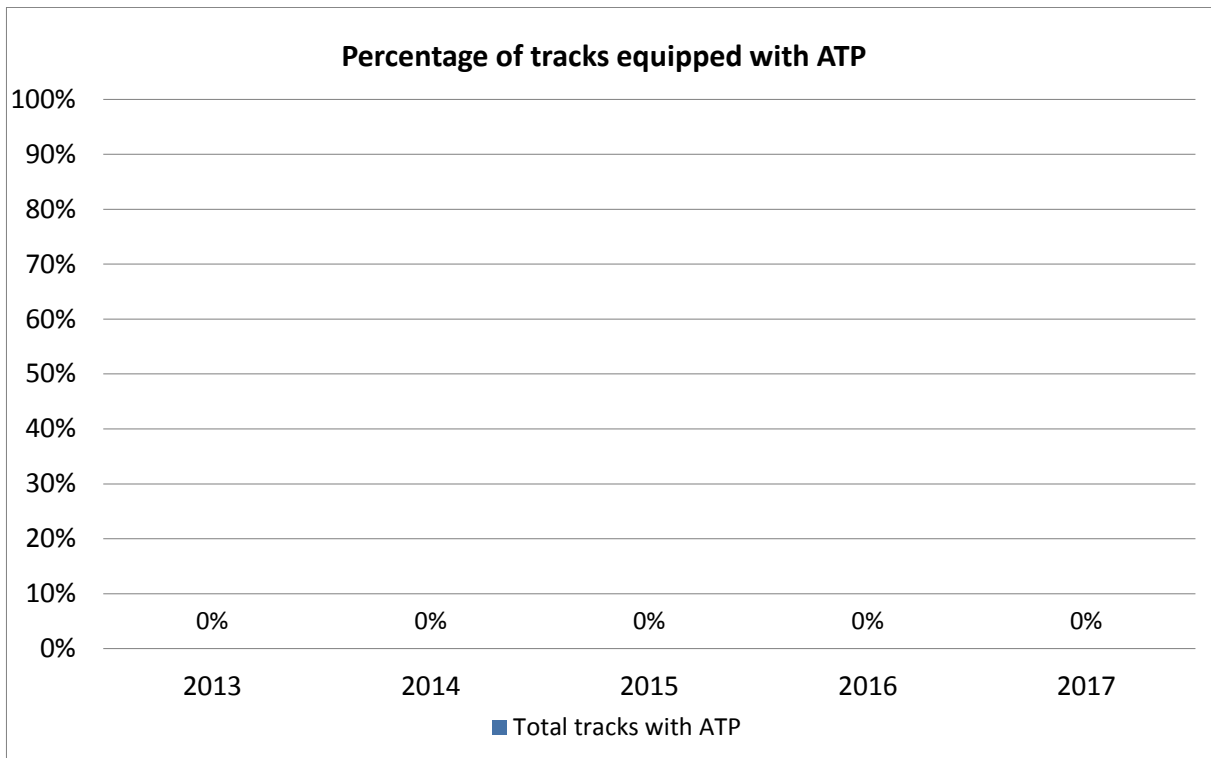


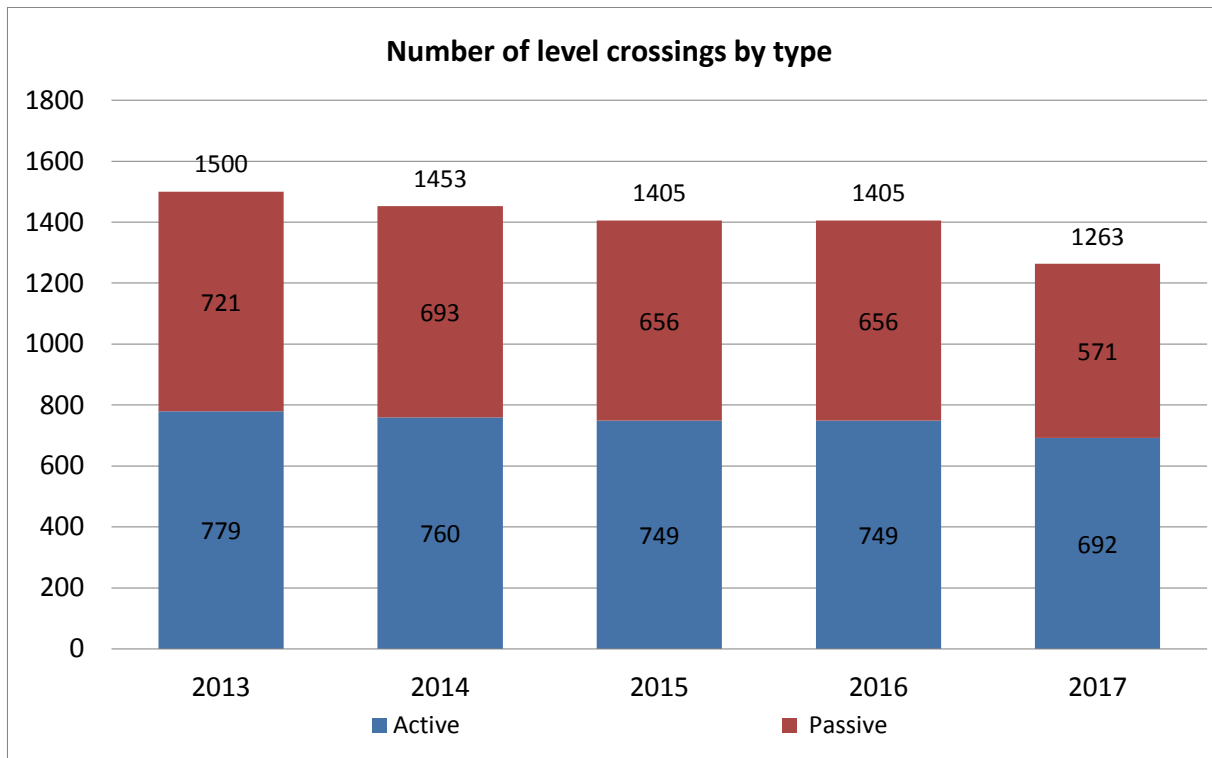












ANNEX B
CHANGES IN LEGISLATION

Table 1

AMENDMENTS TO RSD	Transposed (Y/N)	Legal reference	Date of entry into force
Directive 2008/57/EC	Y	Presidential Decree 104/2010	12/10/2010
Directive 2008/110/EC	Y	Presidential Decree 71/2010	3/8/2010
Commission Directive 2009/149/EC	Y	Presidential Decree 71/2010	3/8/2010
Commission Directive 2014/88/EU	Y	Joint Ministerial Decision ΑΣ4.1/60964/3095	19/11/2015

Table 2

LEGISLATION AND REGULATION	Legal reference	Date of entry into force	Description of change	Reasons for the change
Concerning the NSA				
Concerning NoBos, DeBos, ABs, third party entities for registration, examination, etc.				
Concerning RUs/IMs/ECMs	Regulatory framework 5511/2017(Official Gazette of the Hellenic Republic B' 1156 / 04-04-2017)	04-04-2017	Regulatory framework for the approval of inspection bodies for conformity assessment, periodic inspections, interim inspections, exceptional checks in accordance with paragraph 1.8.6 of the RID	
Concerning RUs/IMs/ECMs	Joint Ministerial Decision G 5/22039/2825 (Official Gazette of the Hellenic Republic B' 2915/24-08-2017)	24-08-2017	Adaptation of Greek legislation to the provisions of Directive 2008/68 / EC of the European Union Parliament and the Council, in this respect with inland transport of dangerous goods as annexes have been adapted in science and technology progress with Directives 61/2010 / EU, 2012/45 / EU,2014/103 / EU and (EU) 2016/2309	
Implementation of other EU requirements (if concerning railway safety)				