

**Information
regarding GSM-R
protection filter
installation and
compensation sceme
in Sweden**



TRAFIKVERKET

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Background co-existence GSM-R 3G/4G in 900 MHz spectrum

- GSM-R has been in operation since 2000 in Sweden.
- 2009 EU changes the conditions for 900 and 1800MHz spectrum. (2009/766/EG)
- 2009 the Swedish regulator PTS releases updated licenses to allow UMTS/LTE in the 900 MHz band.
- 2014 Trafikverket releases an RFQ for protection filters
- 2015 The Commission allow installation of protection filters for GSM-R CAB radios from July 1 2015



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Trafikverkets RFQ for protection filters

Trafikverket released an RFQ for two types of filters with optional integrated switching function.

”Filter type 1” recommended for CAB radio and mandatory for EDOR (ETCS Data Only Radio)

”Filter type 2” is an acceptable for protection of CAB radios if space in the drivers cabin is limited.



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Regulation SFS 2015:307 regarding compensation scheme for installation of protection equipment in trains

Trafikverket is appointed by the Swedish government to coordinate installations of protection equipment for some 2000 + trains and locomotives.

Trafikverket handles the compensation scheme for coming installations of protection against interference from PNMO (filters or improved radiomodule).

Applications to take part of the compensation to be sent by train owners and train operators to Trafikverket

Bottleneck will be installation recourses



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How the compensation was done

Following steps regarding compensation was agreed with the organization for train operators.

- 1) Installation and verification of protection equipment must be completed by July 1 2016
- 2) To speed up installations the train owners were compensated for installation of protection for CAB radio and EDOR completed by February 28 2016.
- 3) From March 1 2016 till June 30 2016 the compensation was reduced to 50% of the cost.
- 4) The compensation scheme was extended from July 1 2016 until December 31 2017.



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CO-EXISTENCE FAQ of Sweden

- - Large filter recommended by IM Trafikverket
 - The substitute from government for CAB-radios is for large filter or small filter or improved radio module or new CAB-radios with improved radio module
 - The substitute from government for EDOR is for large filter
- The substitute scheme is valid for national and international RUs and contractors vehicle active in Sweden during 2015 and 1016. You get substitute for installation made until 30/6 2016.
- If RUs don't have made any of the solution in the substitute programme they have to do CSM-RA and show how the traffic safety risks caused by interference are mitigated
- For national traffic no switch is installed → NO public roaming anymore for trains with filter. (>90% of installations of CAB-radios)
- No national roaming for CAB-radio is needed in Norway and Denmark. Germany is unclear for Swedish RUs, DB has a demand for public roaming but if it must be realized by the CAB-radio or could be realized by a separate hand-held as in Norway is unclear. (In reality the RUs have been without national German roaming until now, when they use Swedish SIM-cards up to today)



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Thank you

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