

Test Train & Loading Gauge

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Agenda

1. Context / reminder

2. *State of play investigations led by SNCF Réseau under the coordination of RFC NSM*

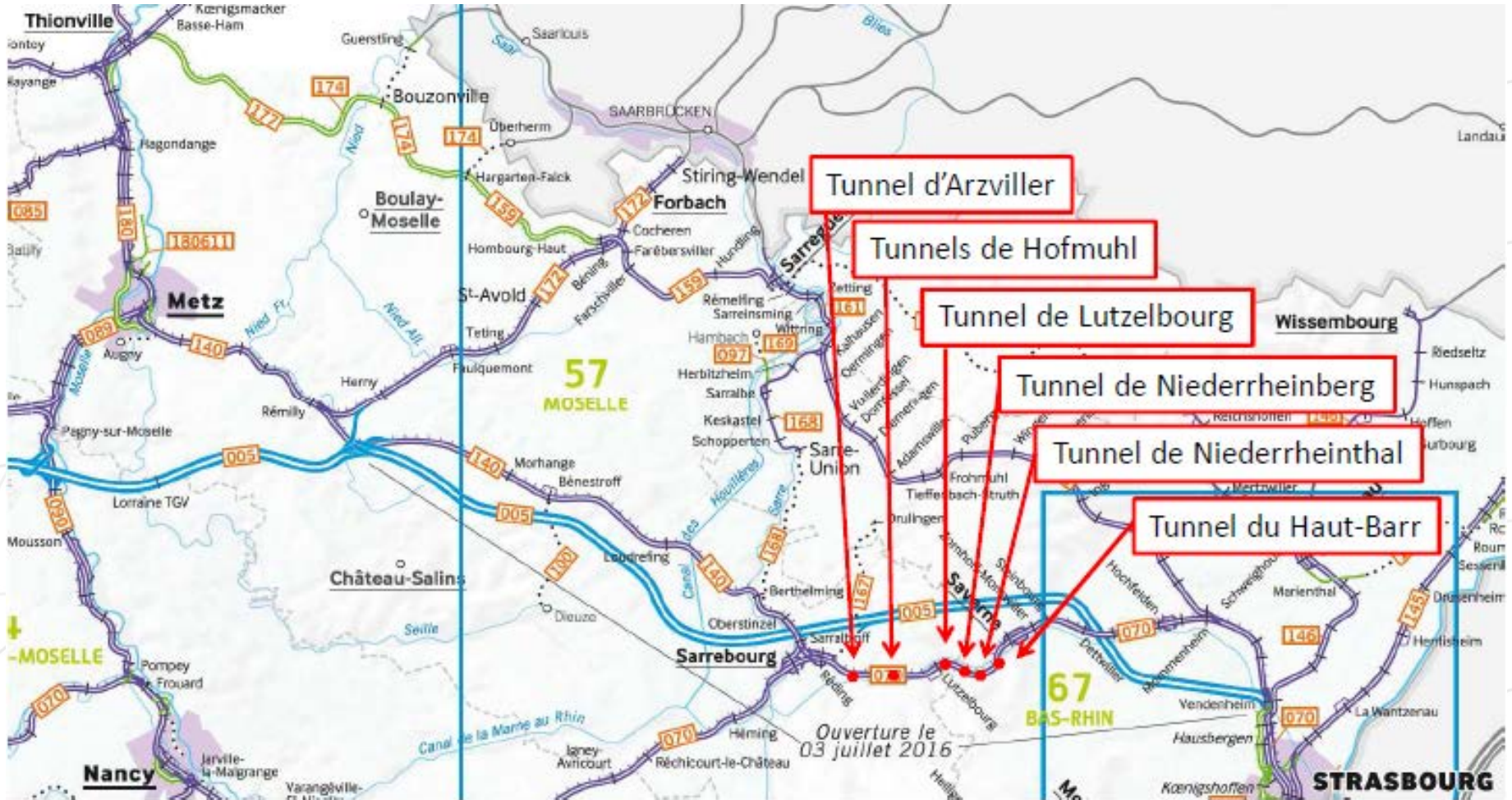
3. *Conclusions*

1. Context of the demand

- RU's declared that they run by "mistake" a P400 train between Bettembourg and Basel on September 2016, creating a doubt on the real gauge limitation through the Vosges tunnels and the Swiss ones at the entrance of Basel.
- During the RAG Meeting on 25th January 2017, the Railway Undertakings expressed the need to have an open discussion with experts of the engineering department of SNCF Réseau.
- The RFC NSM team organized several meetings with RU's and SNCF Réseau to define a common approach the objective of which is to check if the real gauge limitation can allow P394 and P400 trains on the considered RFC NSM section.
- On July 5th and 6th 2017, Lohr made several measures with a round trip test train between Bettembourg and Basel, collecting data measures for 6 French tunnels and 2 Swiss tunnels (at the entrance of Basel).
- For the French tunnels, the results of the RU's study were presented on October 10th, 2017 to SNCF Réseau.

1. Context of the demand

The considered section with 6 tunnels in France



1. Context of the demand

The considered section with 2 tunnels in Switzerland



1. Context of the demand

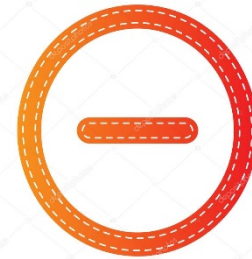
□ Rastatt incident :

- Political awareness : MoT's
- IM's top management is more sensitive to the subject
- The rail freight market stakeholders are putting a more important pressure.



□ Financial Constraints

- A positive ROI is mandatory for SNCF Réseau investments (But French MoT can invest without this condition)
- Freight path revenues cannot justify such investments



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2. State of play investigations led by SNCF Réseau under the coordination of RFC NSM

Further to this study, RFC NSM organized with SNCF Réseau several technical internal meetings :

□ **Dates :**

- November 7th, 2017
- November 29th, 2017
- January 16th, 2018

□ **3 meetings with RU's** were held on October 2017, and December 11th, 2017 and January 30th 2018:

□ **Objectives of these meetings for SNCF Réseau:**

- Analyse the measuring data received.
- Compare them to the most recent internal data.
- Check if the loading as described by RU's is compatible with the P400 & P394 repository that is under construction.
- Check the most adapted gauge compatible with P386 semi trailer.
- Check compatibility gauges repository with RFC NSM lines for the main impacting tunnels, including margin variation.
- Identify quick wins actions.

2. State of play investigations led by SNCF Réseau under the coordination of RFC NSM

The first investigations raised the following points:

- ❑ The SNCF Réseau definition for GP400 & GP394 SNCF Réseau repository (under construction) sticks to the UIC leaflet, but the loading proposed and considered by RU's as P400 standard (i.e T3000 pocket wagon + P400 semi-trailer) does not fit into the GPXXX gauge repository.
- ❑ → **Questions to be deepened:**
 - *Does the 596-6 UIC leaflet fit the current market standard ?*
 - *Do IM's use the same values for technical parameters to define their repositories ? → Ex: centring tolerance*
 - *Do IM's and RU's have the same interpretation of the technical parameters ?*
 -

4. a) Structural technical parameters

- UIC leaflet 596-6**



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- Centring tolerance : +/- 10 mm in the leaflet but the market standard seems to be +/- 50 mm ?
- Wagon codification :

Tableau 2 : Caractéristiques des wagons du transport combiné et des bogies des systèmes semi-remorques

	Wagon-poche	Wagon-porteur pour caisses amovibles pour transbordement horizontal	Wagons-porteurs à 2 essieux pour caisses mobiles	SR sur bogies Système Kombirail Système Road Railer Système Transtrailer
Lettre de code ^a	P / N / C	B	C	K / R / T
Total des jeux transversaux du wagon	11,5 mm	11,5 mm	23 mm	11,5 mm
Distance entre les pivots de bogies ou empattement dans le cas de wagons à 2 essieux	(voir les points A.1 - page 13 et A.3 - page 15)	(voir point A.1)	(voir point A.2 - page 14)	(voir Annexe F - page 38)
Empattement des bogies	(voir les points A.1 et A.3)	(voir point A.1)		(voir Annexe F)
Hauteur du plan de référence au-dessus du plan de roulement	330 mm	330 mm	330 mm	330 mm
Porte-à-faux maximum de l'UTI par rapport aux pivots de bogie et par rapport aux essieux dans le cas de wagons à 2 essieux : a) SR b) CM	(voir les points A.1 et A.3) (voir les points A.1 et A.3)		(voir point A.2)	Négligeable pour le calcul de réduction
			10 mm	2 mm

stabilité d'enveloppe.

SBB, DB, NS, SNCB, GC(SJ) DK(DSB), NSB	+ 6
FS - PKP - CFL - ÖBB	0

	a
+ 6	SBB, DB, NS, SNCB, GC(SJ) DK(DSB), NSB
0	FS - SNCF - PKP - CFL - ÖBB

- Other parameters to be checked ?

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3. Conclusions of the Working Group

- P400 on standard wagons need infrastructure investments
 - The ongoing definition of the P394 will enable to fine tune the needed investments
 - External investments need to be found
 - SNCF R could be inspired by SBB calculations methods to adjust the gauge envelope as closely as possible.
- An emerging need for the P386
 - but no repository is planned for this gauge
 - ATE (temporary and permanent) can be asked to the BTE
- The results of the Swiss part of the Lohr / RUs study are now available
 - They show a clearance from the two considered tunnels
 - But these results are contradictory to those of SBB
 - SBB accepts to recheck and compare these data
- The SNCF R / BTE / CRETE tool can not be challenged as SNCF R decided not to make evolve the software, but to replace it by 202.

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