ROADMAP			
TITLE OF THE INITIATIVE	Effective reduction of noise generated by rail freight wagons in the European Union		
LEAD DG – RESPONSIBLE UNIT	MOVE	**DATE OF ROADMAP**	04/2013
This indicative roadmap is provided for information purposes only and is subject to change. It does not prejudge the final decision of the Commission on whether this initiative will be pursued or on its final content and structure.			

A. Context and problem definition

(1) What is the political context of the initiative?

(2) How does it relate to past and possible future initiatives, and to other EU policies?

(3) What ex-post analysis of existing policy has been carried out? What results are relevant for this initiative?

(1) Noise is regarded as the environmental Achilles' heel of the European railways. The Commission is aware of this and therefore pursues the objective of noise reduction without jeopardising the competitiveness of rail transport (as stated in the 2008 Communication on "Rail noise abatement measures addressing the existing fleet"[1]). In concrete terms the aim is reducing the level of noise nuisance that affect people living close to railway lines by means of abatement measures with the highest cost-effectiveness ratio and health benefits.

It can be observed that railway noise is increasingly becoming a major political issue in the EU and this trend will continue, with a forecasted increase in rail traffic. The Commission regularly receives letters from local authorities and citizens' group affected by high level of rail traffic (especially from Germany and the Netherlands) asking for further EU action to reduce noise levels.

(2) The Commission has already taken measures in order to reduce noise produced by rail traffic:

- In the context of the railway interoperability directives (Directive 96/48/EC and 2001/16/EC, replaced by 2008/57/EC), a Technical Specification for Interoperability (TSI) on Noise was adopted in 2005 and replaced in 2011 by 2011/229/EU. This TSI set maximum levels of noise produced by new (conventional) railway vehicles. Reducing further the existing noise limits for new wagons and locomotives is on the agenda; adoption of a revised TSI Noise is planned for end 2013/beginning 2014.
- Directive 2002/49/EC (Environmental Noise Directive) relates to the assessment and management of environmental noise to alleviate problems where the exposure is high. Whilst the Directive does not establish any binding targets for ambient noise at European level, it does require Member States to elaborate noise maps concerning major infrastructures including rail and, on their basis, draw up action plans for reducing noise exposure near to the hot spots identified in the mapping.

However, due to the very slow renewal rate of rolling stock, there has been a need for additional measures addressing the existing freight wagon fleet (TSIs concern only new wagons).

In 2008 the Commission adopted the "Communication on Rail noise abatement measures addressing the existing fleet". Its aim was to identify and to promote measures to overcome obstacles for retrofitting of freight wagons. A combination of noise-differentiated track access charges, noise emission ceilings and voluntary commitments was identified as the most appropriate solution.

The main advantages were the highest benefits in terms of noise reduction (with a benefit/cost ratio of up to 10), potentially lower overall costs compared to direct subsidies, and its wide coverage including wagons registered in different Member States or even in third countries. The market-based instrument of differentiated track access charges also provides incentives to prioritise the retrofitting of the most used wagons. In addition, noise emission ceilings could help to increase the effectiveness of differentiating track access charges as railway undertakings have more incentives for retrofitting. In this vein, the Communication announced several policy initiatives to be undertaken in the coming years.

The following measures concerning railway noise have been recently adopted or are currently in the pipeline:

- The recast of the first railway package (Directive 2012/34/EU)[2], adopted in November 2012, foresees an optional introduction of noise-differentiated track access charges (NDTAC).
- Commission adopted on 19 October 2011 a proposal for a Regulation of the EP and Council establishing the Connecting Europe Facility (COM (2011)665/3) with substantial budget earmarked for

transport projects. It allows the EU to co-fund retrofitting of existing freight wagons with silent brake blocks (max 20% of eligible costs). The proposal is now in discussion between the Parliament and the Council.

In addition, the introduction of NDTAC can be regarded as the first step towards internalisation of the cost of noise, as indicated in the Commission's Transport White Paper of 2010[3] which announced a "full and mandatory internalisation of external costs (including noise, local pollution and congestion on top of the mandatory recovery of wear and tear costs) for road and rail transport" by 2020 at the latest.

(3) The outcomes of the existing rail noise policies and measures at the EU and national level provide some preliminary findings.

An analysis of the Dutch system[4] shows that NDTAC alone might not be sufficient to guarantee quick and/or noticeable reduction of railway noise. This is linked with insufficient financial incentives, complicated procedure to receive the "quiet wagons/train" bonus and unwillingness to retrofit due to increased (and not refunded) operating costs on the side of operators.

A Swiss[5] example[6] shows that even complete coverage of retrofitting costs by public subsidies may not be sufficient to make all rail operators retrofit their wagons. Therefore the Swiss authorities are scheduled to introduce (unilaterally) a ban on freight wagons in use which do not comply with the noise limits set in TSI-Noise, by 2020.

Finally, several studies[7] have concluded that the renewal rate of the freight wagons is very slow due to their very long life-span and without additional measures significant reduction of railway noise will take decades, not years, as planned in the Commission analysis.

What are the main problems which this initiative will address?

This initiative seeks to address the following problem:

Rail noise affects negatively human health and leads to public opposition to rail traffic

Many local communities are affected by excessive rail noise. Scientific reports confirm that transport noise, besides lowering the quality of life, may cause concrete health problems (insomnia, problems with concentration, hypertension, increased risk of heart attacks)[8]. Citizens' organisations, local authorities and non-governmental organisations are demanding – also from the Commission – more action to reduce the level of rail noise, especially along the busiest railway lines (which are, most often, the TEN-T lines). They invoke possible health complications, low quality of life, decreasing revenues (from tourism etc.) and falling property prices as the most important problems for citizens living close to railway lines.

Moreover, these problems coupled with increased awareness drive public opposition to construction of new railway lines and/or to increasing the capacity of existing ones. It is particularly worrying in the context of forecasted growth in railway traffic (especially freight), as such an opposition could lead to decreasing support of rail transport and, in consequence, result in a related modal shift to other modes. This would have negative consequences for the society as a whole due to overall higher negative environmental impacts of other transport modes.

The underlying elements of the problem are the following:

1. Freight wagons not conforming with TSI-Noise limits as the most important source of rail noise

The rail noise stems predominantly from a wheel-rail contact ("rolling noise") and increases with deterioration of wheel's surface; this roughness is caused by cast iron brakes used commonly in freight traffic. Additionally, freight trains often operate at night when the potential for disturbance is the highest. Since adoption of TSI Noise in 2006 all new freight wagons are required to conform to certain noise limits; this is easily achieved by installation of composite brake blocks (K- and LL types) which do not roughen the wheel surface. However, freight wagons in use ("old wagons") are not required to comply with these limits and they constitute a vast majority of the European fleet of freight wagons estimated at 370 000 in 2010[9] and at 411 000 in 2012[10]; in Germany alone this number was estimated at 265 000[11]. The number of TSI-Noise compliant freight wagons was estimated in 2012 at about 37 000[12], which is only about 9% of the total number of freight wagons.

Therefore freight wagons in use which do not comply with TSI Noise levels of maximum noise can be considered as the most important source of rail noise and should be the focus of any future EU action.

2. Existing measures are not sufficient to quickly reduce the level of rail noise

It has become clear from studies and tests that acting at the source of the problem – namely replacing the "noisy" cast iron brake blocks with the silent composite/organic ones – is more effective than spending money on noise mitigation measures like noise barriers. Retrofitting wagons with "silent" brake blocks can bring up to 10 dB reduction in perceived level of noise (which can effectively halve the railway noise perceived by humans). However, there is evidence that the existing or proposed EU level measures will not be sufficient to provide sufficient incentives to operators to retrofit their wagons with silent brake blocks. The mandatory introduction of NDTAC, advocated by the Commission in the recast of the First Railway Package, was not upheld by the

European co-legislators and in effect its introduction will remain voluntary. The Commission will nevertheless propose implementing measures in that regard which will be applicable in those Member States that decide to introduce NDTAC scheme. Additionally, some stakeholders (especially railway undertakings and wagon keepers) argue that even if costs of retrofitting freight wagons with "silent" brake blocks are completely reimbursed via NDTAC scheme, this will not be enough as operating costs of retrofitted wagons would rise[13]. Taking the above into account, it seems that the effectiveness of any NDTAC scheme may be limited at EU level.

These facts, coupled with a slow exchange rate of rolling stock in general, lead to the consequence that the level of rail noise will presumably not be substantially reduced in the EU within the coming decade.

3. Risk of unilateral measures leading to barriers to railway interoperability and internal market

The urgency of the issue and political pressure have lead some countries to propose unilateral measures, e.g. Switzerland has recently proposed a national measure banning all wagons that do not comply with certain noise limits from its territory, by 2020[14]; it is to enter into force in 2013/2014. Germany and the Netherlands consider similar measures. This could result in major perturbations for provision of cross-border rail services and barriers for railway interoperability, with likely distortion of competition and obstacles to trade and provision of services. It would also be against the principles of interoperability, as laid down in Directive 2008/57.

4. Different regimes in place lead to legal uncertainty and over-utilisation of old rolling stock

Currently there are different legal regimes for new (and upgraded) wagons (TSI-Noise limits) and for existing wagons (no noise limits). This creates confusion for the wagons owners and operators and involves the risk of only "temporary" retrofitting with LL-blocks only in order to receive the subsidy/bonus. It would not be impossible for operators to come back to cast-iron blocks – which are believed to have lower life-cycle costs – afterwards.

Moreover, the existence of different regimes for wagons can have another detrimental effect: as the application of TSI-Noise limits has its price (i.e. it increases the overall price of a new wagon, including the rental price), the operators prefer to use – and over-use until their technical death – the old rolling stock which does not have to be TSI-Noise compliant and is thus less expensive. This is counterproductive to the aim of making the fleet of wagons more silent and has negative consequences for the citizens.

Who will be affected by it?

Railway operators, wagons owners/keepers, people living next to railway lines, possibly national (central and/or local) authorities.

Is EU action justified on grounds of subsidiarity? Why can Member States not achieve the objectives of the proposed action sufficiently by themselves? Can the EU achieve the objectives better?

Any unilateral measures affecting wagons in circulation undertaken by Member States would disturb free provision of cross-border railway services and would constitute an obstacle for railway interoperability. Therefore, an eventual Union action is justified. Furthermore, with the emergence of rail freight corridors, measures taken unilaterally by a local or national authority would not be sufficient to address, the concerns of people living next to railway lines crossing several Member States. Hence the justification for a European intervention.

B. Objectives of the initiative

What are the main policy objectives?

The general objective of this initiative is to effectively reduce, by 2020, the level of noise of freight wagons in the European Union, while maintaining the competitiveness of rail sector vis-à-vis other modes.

The specific objectives are the following:

- Increase quality of life and wellbeing (avoid possible negative health complications) for citizens living close to railway lines;
- Build greater acceptance by citizens of further development of rail transport (especially freight), including construction of new railway lines and increasing the capacity of existing ones;

The operational objectives are the following:

- Effectively tackle noise level of freight wagons in use as the biggest rail noise contributor;
- Avoid creating obstacles to railway interoperability by possible introduction of unilateral national measures banning noisy wagons in use;
- Avoid distortion of free provision of rail services (internal market) by possible introduction of unilateral national measures banning noisy wagons in use;

- Introduce more clarity of regulatory environment for providers of railway services as regard the environmental requirements;
- Prevent over-utilisation of old rolling stock.

The accompanying impact assessment will consider which indicators and targets shall be used to measure the progress in terms of the operational objectives.

Do the objectives imply developing EU policy in new areas?

No, these objectives are in line with the existing EU transport policy.

C. Options

(1) What are the policy options (including exemptions/adapted regimes e.g. for SMEs) being considered?
(2) What legislative or 'soft law' instruments could be considered?
(3) How do the options respect the proportionality principle?

(1) Initially the following policy options are considered:

1. Status quo (baseline scenario)
2. Increased financial support for retrofitting of existing wagons with low-noise brake blocks ["incentives approach"]
3. Noise-differentiated track access charges ["NDTAC approach"]
4. Mandatory application of TSI-Noise limits to all existing railway wagons ["TSI Noise approach"]
5. Introduction of a noise limit along the TEN-T railway Network ["TEN-T approach"]

These options, focussing on the action in rail sector only, will be initially assessed in terms of their costs and benefits. In case none of them is considered efficient, an additional option would be to address railway noise together with other modes of transport within wider context:

6. Introduction of a general maximum transport-related cumulative noise exposure ["environmental health approach"]

Short description of options:

1. Status quo (baseline scenario): the measures in place (mainly TSI-Noise) will continue to be used with a gradual effect on the overall fleet. Implementing measures resulting from existing legislation in relation to noise (NDTAC) will be adopted by the Commission, what would mean harmonising the regulatory environment for those Member States which decide to introduce the NDTAC.

2. Increased financial support for retrofitting of existing wagons with low-noise brake blocks ["incentives approach"]: this option assumes that the introduction of the NDTAC scheme remains optional for Member States, but an additional fund will be created at the EU level. This fund would co-finance the retrofitting of wagons (plus eventually other linked costs) from the EU budget up to a given percentage. It would render the exercise more interesting for Member States and for the operators by making it less expensive for national budgets, by raising the reimbursement rate or including additional costs, on top of the costs of retrofitting.

3. Noise-differentiated track access charges ["NDTAC approach"]: in this option the effectiveness of a voluntary NDTAC, as foreseen under Directive 2012/34/EU, will be analysed. In particular, the aim is to identify the most effective common modalities for the application of the charging for the cost of noise effects and possible "spill-over effects" of introduction of NDTAC in those countries that decide to opt-in. The expected effects of voluntary NDTAC will be compared to the potential outcome of mandatory NDTAC across the EU.

4. Mandatory application of TSI-Noise limits to existing railway wagons ["TSI Noise approach"]: in this option the application of TSI-Noise would be extended to all wagons, including the existing ones circulating since before 2006, thereby unifying the noise requirements for all the wagons. The most appropriate date (and eventual transition period) of such an operation would have to be found.

5. Introduction of a noise limit along the TEN-T railway Network ["TEN-T approach"]: this option assumes that only TEN-T railway lines would be subject to stricter noise limits for all the wagons (TSI-Noise will continue to apply to new wagons everywhere). These are the lines of major importance for the EU with the biggest flows of traffic and specific maximum noise limits could be implemented only for them.

6. Additional option: Introduction of a general maximum level of transport-related cumulative noise exposure ["environmental health approach"]: in this option the problem of railway noise would be treated together with other modes of transport. The focus will be on exposure and reducing the overall number of population affected by transport noise.

(2) Legislative instruments which can be considered:

- Revision of TSI Noise to explicitly introduce possibility/obligation of application of TSIs to vehicles in use
- Revision of the Directive 2012/34/EU
- Revision of TEN-T Guidelines Regulation
- Revision of the Environmental Noise Directive
- Stand-alone specific EU Regulation

(3) The options should not impose unnecessary obligations to industry but in any case the respect of the proportionality principle will be carefully assessed in the context of the study and the impact assessment. Competitiveness of the rail sector vis-à-vis other transport modes should be at least maintained.

Measures adopted on the basis of this initiative will be adapted to the capabilities of SMEs; a possibility for exemptions/special treatment will be analysed.

D. Initial assessment of impacts

What are the benefits and costs of each of the policy options?

The benefits and cost of each policy option will be assessed in the impact assessment. At this stage it can be said that likely impacts of the options would be:

1. Status quo (baseline scenario): no additional cost, limited impact on noise reduction resulting mainly from natural renewal rate of rolling stock (average life span 30-40 years) and voluntary introduction of NDTAC in some Member States.
2. Increased financial support for retrofitting of existing wagons with low-noise brake blocks: could result in potentially substantial costs for the EU budget, in particular due to possible inclusion in the eligible cost base also operating costs of railway undertakings (which are believed to be higher after retrofitting with silent brake blocks) and administrative costs linked with managing the system. Impact on overall noise reduction may be limited due to its non-binding character.
3. Noise-differentiated track access charges: no costs (bonus-malus system) or limited costs (bonus system) to public authorities; can be cost-neutral for the sector, if operating and administrative costs are not included or are reimbursed by public authorities. The impact on noise reduction would depend on how many Member States decide to opt-in to the scheme and the extent of eventual spill-over effect to other countries, with mandatory NDTAC having the highest potential. It would be relevant to consider costs and benefits in relation to the number of Member States applying the NDTAC.
4. Mandatory application of TSI-Noise limits to existing railway wagons: no costs for public authorities, industry (railway undertakings/wagon keepers) would bear the costs of retrofitting and higher operational costs. Maximum impact in terms of noise reduction: in theory after a given date all the wagons would become "silent"; no need for any monitoring actions. This option would prevent a risk of re-retrofitting, i.e. a situation by which some operators could be tempted – after having received public funds for retrofitting their wagons with silent brake blocks – to come back to old and noise cast iron blocks due to their lower operating costs. It would be relevant to consider costs and benefits of different noise limit levels.
5. Introduction of noise limits along the TEN-T railway Network: potential significant costs for public (local) authorities if, as a result of this option, infrastructure noise mitigation measures (barriers, windows insulation etc.) will have to be applied; use of measures at the source (wheel and rail) could be not practicable. Potential of noise reduction could be limited and dependent on the level of public spending in different Member States/regions, coupled with limited efficiency of infrastructure measures. It would be relevant to consider costs and benefits of different noise limit levels.
6. Additional option: Introduction of a general maximum transport-related cumulative noise exposure: could potentially prove to be quite costly as it would be up to Member States to ensure that such a maximum level of noise is not breached: sometimes construction of infrastructure noise-mitigation measures would be a costly solution, with linked costs of monitoring of the level of noise. Potential impact in terms of noise reduction can be very high, however it would require constant monitoring. It would be relevant to consider costs and benefits of different levels of noise exposure.

Could any or all of the options have significant impacts on (i) simplification, (ii) administrative burden and (iii) on relations with other countries, (iv) implementation arrangements? And (v) could any be difficult to transpose for certain Member States?

1. Simplification: Option 4 has a potential to simplify the legislative requirements by aligning limits to new and old wagons.

2. Administrative burden: as above, option 4 has the biggest potential for reduction, while options 2, 3 and 6 will add to administrative costs.

3. Relations with third countries: all options could potentially have an impact on third countries, with the biggest one attributed to option 4 (wagons from outside the EU will have to comply with TSI Noise limits).

4. Implementation and transposition issues: all options could be difficult to implement and transpose for those Member States where:

- rail noise is not perceived as a big political issue by citizens;

- substantial part of traffic results from transport with non-EU countries and/or where railway infrastructure differs significantly from the main EU standards;

- availability of public spending may is problematic.

(1) Will an IA be carried out for this initiative and/or possible follow-up initiatives?

(2) When will the IA work start?

(3) When will you set up the IA Steering Group and how often will it meet?

(4) What DGs will be invited?

(1) Yes, the IA will be carried out

(2) The IA work started in the second half of 2012.

(3) The IA Steering Group has been set up.

(4) Invitation to participate was sent to all relevant DGs: BUDG, COMP, ECFIN, EEAS, ELARG, EMPL, ENER, ENTR, ENV, MARKT, REGIO, RTD, SANCO, Legal Service and Secretariat-General.

(1) Is any option likely to have impacts on the EU budget above € 5m?

(2) If so, will this IA serve also as an ex-ante evaluation, as required by the Financial Regulation? If not, provide information about the timing of the ex-ante evaluation.

(1) Yes, it is possible for option 2 in case of extra EU financial contribution to retrofitting of wagons.

(2) In case option 2 is chosen as the preferred one, this IA will serve also as an ex-ante evaluation.

E. Evidence base, planning of further work and consultation

(1) What information and data are already available? Will existing IA and evaluation work be used?

(2) What further information needs to be gathered, how will this be done (e.g. internally or by an external contractor), and by when?

(3) What is the timing for the procurement process & the contract for any external contracts that you are planning (e.g. for analytical studies, information gathering, etc.)?

(4) Is any particular communication or information activity foreseen? If so, what, and by when?

(1) The Commission adopted in 2008 the "Communication on Rail noise abatement measures addressing the existing fleet", accompanied by the impact assessment report. As a follow-up, a study on “Analyses of preconditions for the implementation and harmonisation of noise-differentiated track access charges” was ordered by the Commission and delivered in October 2009. Results of these two studies will be used.

(2) Existing information is largely outdated and new developments have taken place in recent years. New data will be gathered with help of external contractor by autumn 2013.

(3) Provisional planning for the procurement and external contract:

- Launch of the procurement procedure (framework contract): March 2013
- Signature of contract: April-May 2013
- Duration of the study: May 2013-December 2013, including stakeholder consultation

(4) Communication plan will be decided later.

Which stakeholders & experts have been or will be consulted, how, and at what stage?
As far as industry is concerned, it seems that some stakeholders favour further initiatives that would add clarity and predictability for the business environment and provide stronger signal for fleet renewal. This, inter alia, is to be assessed during stakeholder consultation. The consultation process might be split in 2 parts: 1. general public consultation, and 2. targeted stakeholder consultation. At least, the following organisations/persons are planned to be consulted: - Representative bodies at the European level (referred to in Article 3 of the ERA Regulation) representing: the manufacturing companies, the railway undertakings (the operators), the infrastructure managers, the wagons owners/keepers, the freight customers, and workers and passengers - National railway authorities: Regulatory Bodies - Member States and Switzerland: responsible ministries - Committee of the Regions - Non-governmental organisations active in transport and environmental fields - Associations of citizens - The European Railway Agency

[1] COM(2008) 432 final

[2] Commission proposal: COM(2010)475 final; legislative act as adopted by the European Parliament and the Council: Directive 2012/34/EU

[3] White Paper, Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, COM(2011) 144 final

[4] www.prorail.nl/English/Documents/2992881%20Netverklaring%20%202013%20GN%20bijgewerkt%20tm%20supplement%202%20EN.pdf

[5] Switzerland is not a EU state, but implements most EU rail legislation.

[6] http://www.admin.ch/ch/d/sr/7/742.122.de.pdf

[7] - Impact assessment report accompanying the Communication from the Commission to the European Parliament and the Council on Rail noise abatement measures addressing the existing fleet: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2008:2203:FIN:EN:PDF

- Analyses of preconditions for the implementation and harmonisation of noise-differentiated track access charges: http://ec.europa.eu/transport/rail/studies/doc/2009_10_noise_charges.pdf

[8] European Environmental Agency, 2010, Good practice guide on noise exposure and potential health effects: http://www.eea.europa.eu/publications/good-practice-guide-on-noise/at_download/file

[9] http://ec.europa.eu/transport/rail/studies/doc/2009_10_noise_charges.pdf

[10] Estimate of the Economic Evaluation Unit of the European Railway Agency, September 2012

[11] UIC, 2011, Study to Determine the Transaction Costs of Different Incentive Models for Retrofitting the Freight Wagon Fleet with Composite Brake Blocks, page 80: www.uic.org/IMG/pdf/transaction_cost_study_kcw_english.pdf

[12] Estimate of the Economic Evaluation Unit of the European Railway Agency, September 2012

[13] www.uic.org/IMG/pdf/transaction_cost_study_kcw_english.pdf

[14] Notification 2012/9503/CH, Draft revision of the Federal act on railway noise abatement, Delivery of comments pursuant to Article 8 (2) of Directive 98/34/EC of 22 June 1998: http://ec.europa.eu/enterprise/tris/pisa/app/search/index.cfm?fuseaction=pisa_notif_overview&sNlang=EN&iyear=2012&inum=9503&lang=en&iBack=2