

Abstract of Speech

Major car manufacturers are preparing to meet the next step of pass by noise regulation, with a first phase next year, lowering the L_{urban} regulation level to 70dB and further down to 68 dB in 2024. This call for a number of countermeasures coming with their engineering challenges (Cost, space claim, weight increase, Tire tradeoffs...) to ensure the compliance.

The aim of this talk is to open the debate on a more global level, and try to analyze what could be the final impact of those efforts.

The spirit of pass -by noise regulations is ultimately to reduce citizen noise exposure in the environment, particularly in cities. The 2002/49/CE directive, enforced since the early 2000s, calls for each major city to issue a noise exposure mitigation plan. This plan is based on a model of the environment and an idealization of the sound sources to issue night and day averaged equivalent levels used to assess the noise doses at each location.

It is interesting to understand how those maps, and therefore the decisions taken from them will evolve as car manufacturers reduce the L_{urban} to the requested values.

Simultaneously, the rise of smart cities and big data will very probably empower citizen to measure in real time harmful environmental parameters : air pollution, electromagnetic pollution, ...and noise. For noise, a number of monitoring efforts are already in place, and the unleashed technologies (cheap sensors, big data, data mining...) allows now for automatic source localization and classification, driving to more objective and "real time" annoyance or exposure analysis.

Big data, smartphone apps, connected cheap sensors ... allow now anyone to be aware of the "real life" exposure in cities where the urban "soundscape" is starting to get more and more meaning and attention, as some cities even start to talk about sound quality rather than just noise levels.

How can we make sure that those three axis : source regulations, environmental noise regulation, and the spread of objective and real life exposure assessment are perfectly aligned and that our efforts are indeed beneficial for the citizen?