TDF is an operator of broadcast and telecom infrastructure and networks. We provide services to broadcasters, telecommunications operators and ISPs mostly in France and Germany, with a presence in 6 other European countries. Our operations are based on shared facilities and networks (broadcast, microwave, fiber, satellite). TDF business consists of DTT transmission, radio transmission, Telco Site hosting, Hybrid TV services, video-on demand and catch up TV provision, Web Media services, Ultra High Speed connections, Data Centers.

Although not present in the UK, TDF is very much involved in the European debate on the future use of the 700 MHz and is closely following the situation in the neighboring countries.

This is why TDF welcomes the opportunity given by OFCOM to provide comments to its consultation on future use of 700 MHz, by answering four of the questions raised in as much as our experience in France and other countries may be of value in the UK debate.

These questions allow us to highlight our views on four points which are significant in the French spectrum debate: the calendar of a possible release, the future vision of the DTT platform especially with the generalization of HD and the introduction of UHD TV sets, the risks for interference from mobile to DTT services and the need for long term certainty for the UHF Bands below 700 MHz until at least 2030.

***Question 6: Do you have any comments on our assessment of the timeframes within which it might be possible to complete a DTT replan?***

TDF recalls that the RSPG has estimated the challenge in frequency planning following WRC decisions and the time it would take[1]: the work program was assessed to take at least 3 years, most of which happening after WRC 15 conclusions. Following that report it seems difficult to achieve a frequency replan before end of 2018.

This assessment is consistent with TDF experience during the Digital Switch Over in France and the release of the 800 MHz Band, where the replan phase took more than 5 years, with less constraints.

It is noted in page 6 1.13 that several Member States including France, Sweden and Finland, have already decided to use the 700 MHz for mobile services. TDF wants to point out that in France, as of this response, no official roadmap or calendar for the repurposing has been set.

In TDF's view, 2020 is a lower bound for feasibility in France, in order to ensure the best conditions for the future of the DTT platform, and this view was confirmed by the responses of French stakeholders, from the audiovisual and also the mobile sector, to a consultation by the Ministry of Communication (DGMIC) in July 2013[2].

[1] RSPG Report on proposed spectrum coordination approach for broadcasting in the case of a reallocation of the 700 MHz band (june 2013)
http://rspg-spectrum.eu/2013/06/

[2] DGMIC (ministry of culture and communication) consultation July 2013
http://www.culturecommunication.gouv.fr/Disciplines-secteurs/Audiovisuel/Actualites/Publication-de-la-synthese-de-la-consultation-relative-a-l-avenir-de-la-television-numerique-terrestre

***Question 7: Do you have any comments on our assessment of the loss of value from existing DTT services in case of change of use for the 700 MHz band?***

TDF concurs with the remark in 5.84 “Our approach to estimating the opportunity cost could also understate the total cost if the additional spectrum available without change of use allowed the platform greater flexibility to manage future technological developments” [emphasis added].

Less spectrum available means less resource available for program format enhancement or for simulcast when introducing a new technology.

In France, the previously quoted DGMIC consultation showed a large consensus towards the fact that the DTT platform will need to include more programs in HD format and introduce UHD technology to keep pace with the evolution of TV sets and remain attractive to the viewers.

In that respect, the question of adoption of DVB-T2 (and/or HEVC coding) is central to avoid a frozen DTT platform. The rate for such an evolution is certainly dependent on each national market situation, but the challenge to the broadcasting sector would clearly be more difficult without the availability of the 700 MHz band, and therefore there is in our opinion an associated opportunity cost.

***Question 8: Do you have any comments on our analysis of the implications of potential changes for DTT viewers and for the platform? Are there any effects that may be important to viewers that we should consider further?***

Regarding the proportion of viewers affected by interference, we understand that the situation for 700 MHz interference will differ from the 800 MHz as regards protection ratio issues; but in our experience in France, the vast majority (>95%) of interference cases encountered so far came from amplifier overload at the customer premises[3]. It seems to us that the magnitude of this effect, being much less dependent on the mobile frequency plan, should therefore be considered further.

**Question 15: Do you agree with our approach of estimating the cost of early replacement or should we be considering the full cost? Do you have any comments on how we have estimated the costs of early equipment replacement?**

TDF notes that taking account of the sole cost of early replacement for the incumbent networks significantly lowers the cost used in the cost benefit analysis compared to full replacement cost. It would be useful to show explicitly by how much.

In TDF view it is necessary to take into account the full replacement cost as this is the cost that would need with certainty to be funded and recovered by the impacted stakeholders due to the transition.

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[3] see for instance the report on the Saint Etienne experiment (Dec 12013) established by ANFR, page 13 http://www.recevoirlatnt.fr/fileadmin/contenu/PRO_Rapports/2014-02-18_Rapport_Saint-Etienne_exp_4G-800_MHz.pdf

For TDF, freeing the 700 MHz band would require significant investments which need to be secured by long term certainty for DTT regarding the entire spectrum below 700 MHz until at least 2030. In order to achieve this long term visibility goal, and consistent with reaching lower transition costs, it is of paramount importance that national administrations and Europe assert a clear position against co-primary allocation for the rest of the UHF Band at WRC-15 and the following conferences.