

**ANALYSING THE IMPACTS OF USER DENSITY  
AND SESSION ARRIVAL RATE PER USER ON  
THE TOTAL REQUIRED SPECTRUM FOR  
IMT-ADVANCED FOR FUTURE NEEDS**

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**Abstract**

The ITU spectrum calculation methodology uses a limited set of market study parameters to characterize the future wireless services. The market study parameters characterize the demand of twenty different service categories (SC 1-20) in six service environments (SE 1-6) in three forecast years. There are regional differences in the market development, i.e. in some parts of the world a particular level of market development may be reached earlier or later than in the (average) “global common market”. To characterize the difference in the market development and RAT Group deployment scenarios in different countries, the time shift approach is used to calculate the spectrum requirements. This paper presents the impacts of Market input parameters on the total required spectrum for IMT-Advanced by 2015 and 2020.