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## **Open and regionalised spectrum repositories for emerging countries**

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### **ABSTRACT:**

TV White Spaces have recently been proposed as an alternative to alleviate the spectrum crunch, characterised by the need to reallocate frequency bands to accommodate the ever-growing demand for wireless communications. In this paper, we discuss the motivations and challenges for collecting spectrum measurements in developing regions and discuss a scalable system for communities to gather and provide access to White Spaces information through open and regionalised repositories. We further discuss two relevant aspects. First, we propose a cooperative mechanism for sensing spectrum availability using a detector approach. Second, we propose a strategy (and an architecture) on the database side to implement spectrum governance. Other aspects of the work include discussion of an extensive measurement campaign showing a number of white spaces in developing regions, an overview of our experience on low-cost spectrum analysers, and the architecture of Zebra - RFO, an application for processing crowd-sourced spectrum data.