

# Programming Cognitive Radio using Sora

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Tutorial

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Cognitive radio and dynamic spectrum access (DSA) will redefine the wireless networking. Enabling this new wireless paradigm requires a powerful and flexible wideband software radio platform. To facilitate the implementation and evaluation of new DSA technologies, Microsoft Research Asia has developed a high-speed software radio platform, called Sora. Sora fully utilizes the capability of state-of-the-art multi-core CPU and high-speed PC bus, and is highly capable to implement and experiment existing broadband wireless technologies, like WiFi and LTE.

In this tutorial, we will first introduce the architecture and basic operations of Sora. Then, we will dive into the Sora programming model and how to use Sora to implement a spectrum agile radio system. The tutorial is also featured with a hands-on session. The attendees can experiment on the real Sora system and use the tools discussed in the lecture to rapidly develop a DSA communication system.

More background information on the Sora platform can be found on MSRA site (<http://research.microsoft.com/en-us/projects/sora/>) and Sora forum (<http://social.microsoft.com/Forums/en-us/sora>).

Sora is publicly available for academic research. The order information can be found here (<http://research.microsoft.com/en-us/projects/sora/academickit.aspx>).

The latest Sora SDK can be downloaded here (<http://research.microsoft.com/en-us/downloads/ca9a93a1-2a38-4e3d-b87c-b7...>).

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