Signal Path Scheduling for Reconfigurable SDR RF Hardware

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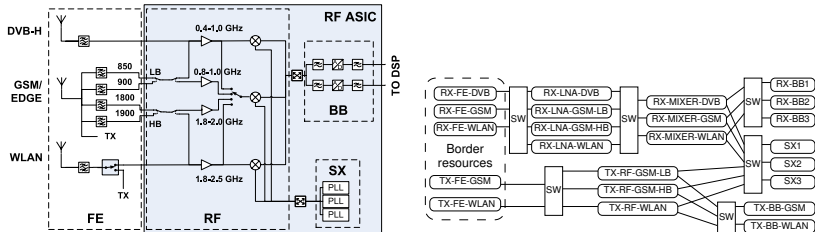Aalto University, School of Science
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Introduction

Signal path scheduling

- For coarse-grain reconfigurable analog RF hardware and radio tasks
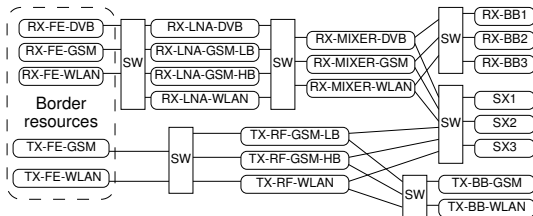- New scheduling problem

Hardware

- ▶ Reconfigurable HW to increase utilization
- ▶ Resource selection by cost and shareability functions
- ▶ Sophisticated multi-radio platforms up to order of magnitude more complex
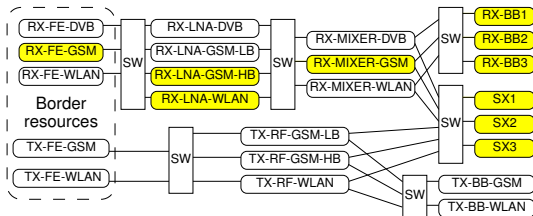
The Signal Path Scheduling Problem

- RF jobs are uninterruptible and rigid
  - *i.e.*, their timing is fixed
  - This is because of timing models in radio protocols
- Scheduling freedom comes from configuration alternatives
- On-line scheduling problem
- Configuration resolution is a *time-path problem*
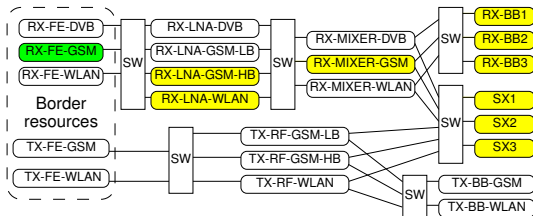- Application-aware problem

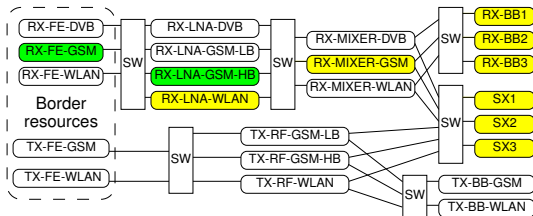# Path Resolution

- GSM high-band RX job

Path Resolution

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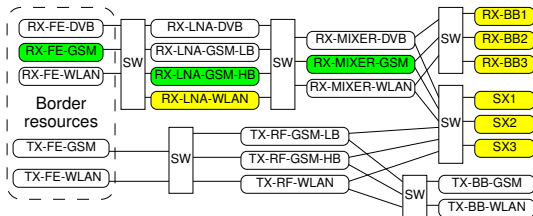
Path Resolution

- ► GSM high-band RX job

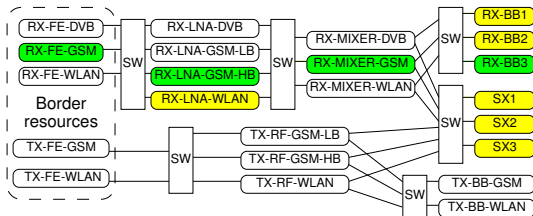# Path Resolution

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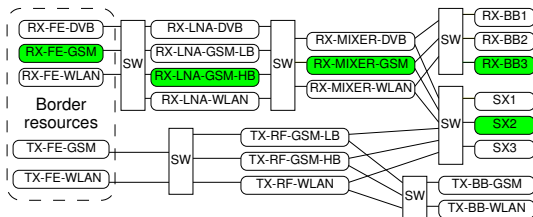
Path Resolution

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- GSM high-band RX job

Path Resolution

▶ GSM high-band RX job

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