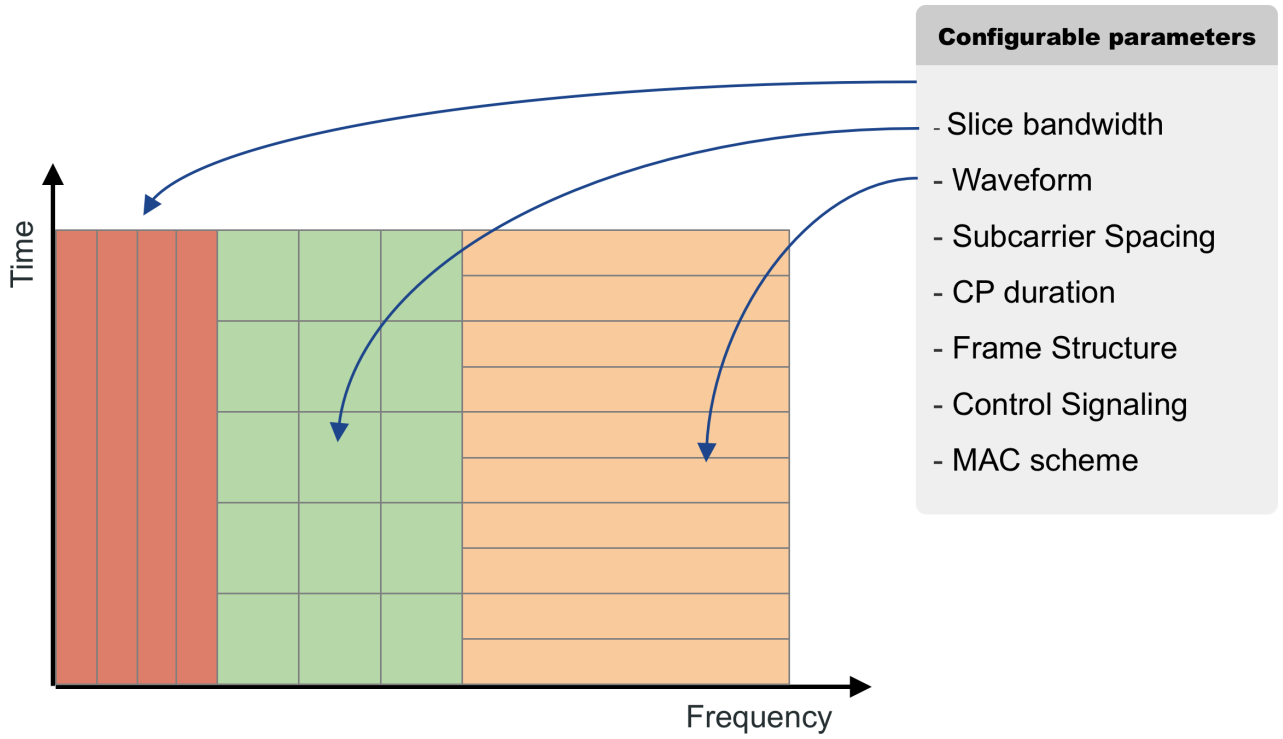
Orchestration and Reconfiguration Control Architecture

BASIC SDR CONTROL PLANE FUNCTIONALITY

Slice coordination

Configuration of virtualized radio instances according to diverse traffic or service (intra slice)



- Leverage SDR flexibility to create and instantiate radio slices with tailored parameters.
- Slices that aim to better serve distinct traffic classes can have different numerology to improve the experienced QoS.

BASIC SDR CONTROL PLANE FUNCTIONALITY

Slice coordination: Configuration of virtualized radio instances according to diverse traffic or service (intra slice)

CONTEXT

Network Slicing (NS) is an effective mechanism to address the heterogeneity of traffic requirements and applications. Through NS, operators can instantiate multiple, independent radio networks, each tailored to the specific traffic requirements of a class of users. We define this process of tailoring each slice with different PHY and MAC schemes as intra-slice coordination. Examples of the parameters that an operator may configure within a slice include bandwidth, waveform type, subcarrier spacing, cyclic prefix duration, frame structure, signalling, and upper MAC protocols.

UNIQUE SELLING POINT

- Design of an SDR control-plane framework for independent parametric reconfiguration of individual time-frequency slices.
- Design of a translation unit that converts requested slice traffic types (e.g. vehicular, IoT, cellular) into a list of PHY and MAC parameters (e.g. carrier spacing, frame structure) that can be interpreted and employed during slice configuration.

OPPORTUNITIES

- Experiment with different slice configurations and evaluate their suitability to each traffic class.
- Development of new slice types that can be integrated and seamlessly controlled through the provided framework.