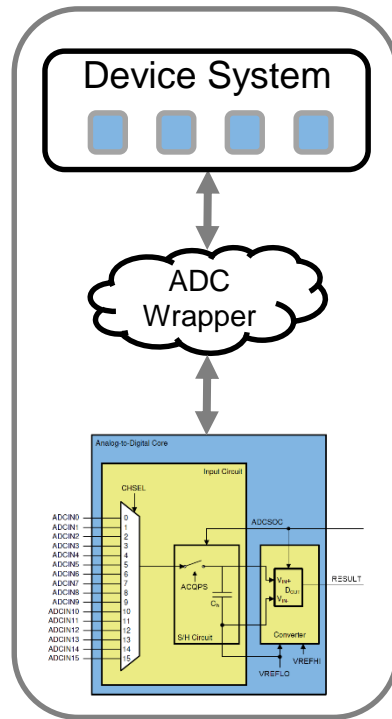


# C2000 ADC Video Series

Analog-to-Digital Converter (ADC) Wrapper

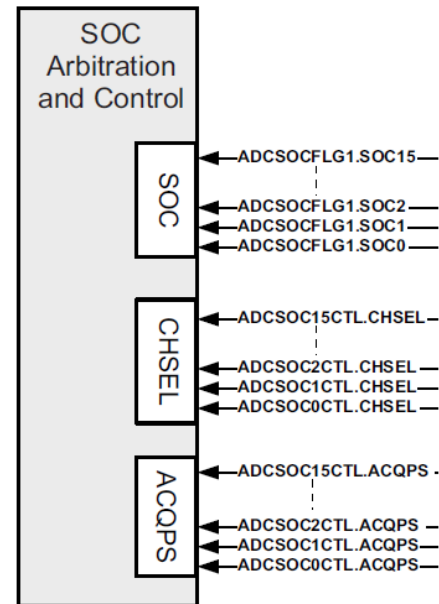
# ADC Wrapper

- ADC Wrapper refers to the digital logic that facilitates ADC interactions with the rest of the device
- Examples of wrapper elements:
  - ADC Configuration Registers
  - ADC Result Registers
  - ADC Trigger Detection
  - ADC Interrupt Generation
  - ADC Post Processing Block
  - SOC "Structures"
  - SOC Sequencing



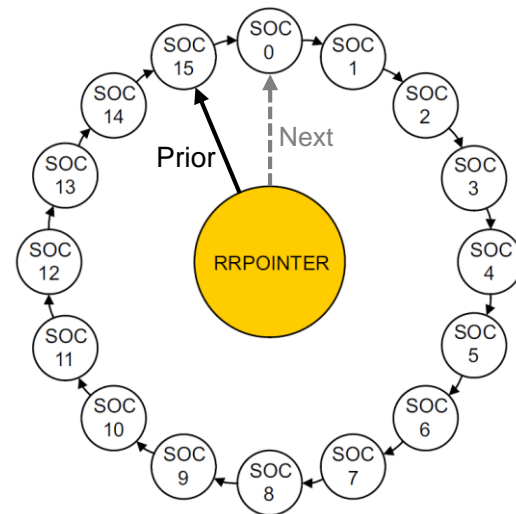
# ADC Wrapper: SOC "Structures"

- SOC "structures" allow the user to define the ADC conversion behavior through software-configurable attributes:
  - Trigger Source Select (TRIGSEL)
  - Channel Select (CHSEL)
  - Acquisition Window (ACQPS)
- Each ADC provides 16 configurable SOC structures, enumerated as SOC0 through SOC15
- The SOC conversion results are mapped to the ADCRESULT register with the same SOC enumeration:
  - SOC3 → ADCRESULT3
  - SOC8 → ADCRESULT8



# ADC Wrapper: SOC Sequencing

- When an ADC trigger is asserted, every SOC that is mapped to that trigger will be added to a pool of pending conversions
- By default, the wrapper will service the triggered SOC's nonstop using a round robin sequence until the conversion pool is empty
- SOC's may be configured as high priority in order to skip ahead of the round robin sequence



# ADC Resources

- Analog Subsystem Training Module and Guided Lab in [C2000 Academy](#)
- [TI Precision Labs ADC Series](#)
- ADC Application Reports
  - [Input Signal Circuit Design](#)
  - [Charge Sharing Circuit Design](#)
  - [Simulating Charge Sharing Circuits](#)
  - [Mitigating Channel-to-Channel Cross-talk](#)