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# **MARTe2 Users Meeting**

## **Introduction to the demonstrations**

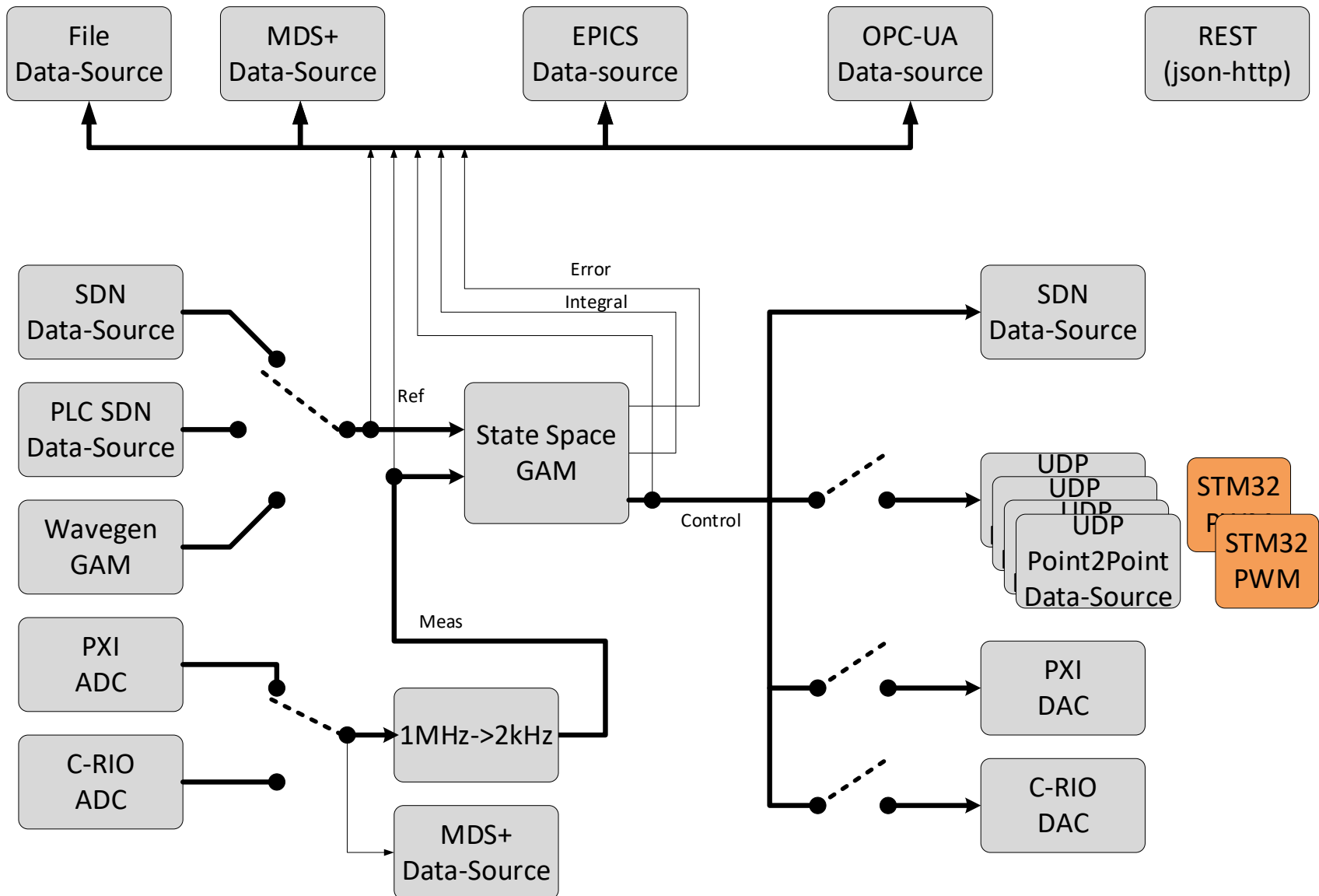
Andre Neto

May, 2019



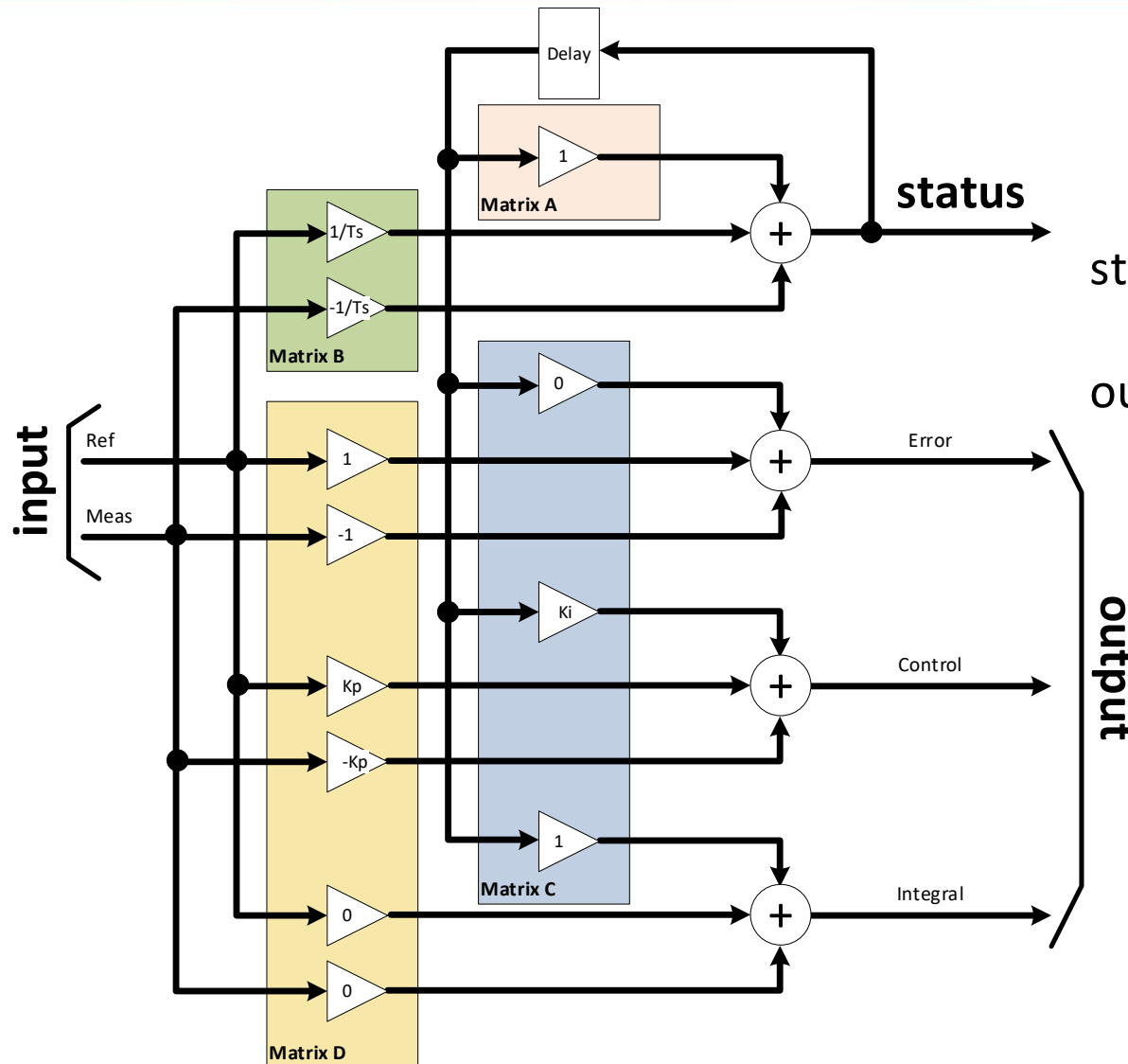
- Similar structure – only update the interfaces
  - Some examples are standalone and can be run on your computer
  - Other examples require hardware
    - PLC
    - PXIe
    - CRIO
    - STM32
    - RPI3

# The big picture



- IOGAM
  - DataSource Input/Output operations
- FilterDownsamplingGAM\*
  - Filter and downsample
- WaveformGAM
  - Reference generation
- HistogramGAM
  - Statistics
- SSMGAM
  - State space
- ConversionGAM
  - Type casting

***\*Private GAM for the demo (not official/no QA)  
No GAMs were hurt in the making of this demo***



### State Space

$$\begin{aligned} \text{status}(t+1) &= \\ &\mathbf{A} * \text{status}(t) + \mathbf{B} * \text{input}(t) \\ \text{output}(t) &= \\ &\mathbf{C} * \text{status}(t) + \mathbf{D} * \text{input}(t) \end{aligned}$$

- FileDataSource::FileWriter
  - Data archiving
- MDSWriter
  - Data archiving
- NI6259::NI6259ADC & NI6259::NI6259DAC
  - PXIe interface
- LinuxTimer
  - Timing for debugging
- LoggerDataSource
  - Display signal values in console
- SDN::SDNSubscriber & SDN::SDNPublisher
  - Real-time network

- EPICSCA::EPICSCAOutput
  - EPICSv3 output
- EPICSPVADataSource::EPICSPVAOutput
  - EPICSv7 output
- OPCUADataSource::OPCUADSInput & OPCUADataSource::OPCUADSOutput
  - OPCUA input/output
- NI9157MxiDataSource
  - MXI CRIO interfacing



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# Thank you for your attention

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