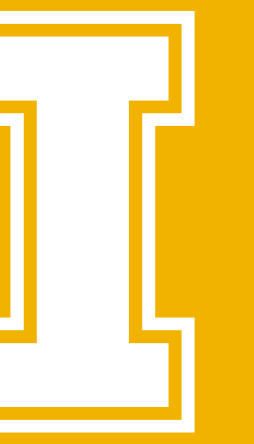


TWO STROKE ENGINE EMISSIONS AND DATA ACQUISITION

LUKAS WILLITS AND GARRETT POTTS



I Objective - Clean and Powerful

The goal of the project is to reduce exhaust pollutants during normal engine operating conditions without reducing power through catalyst research and engine testing

I Design Validation



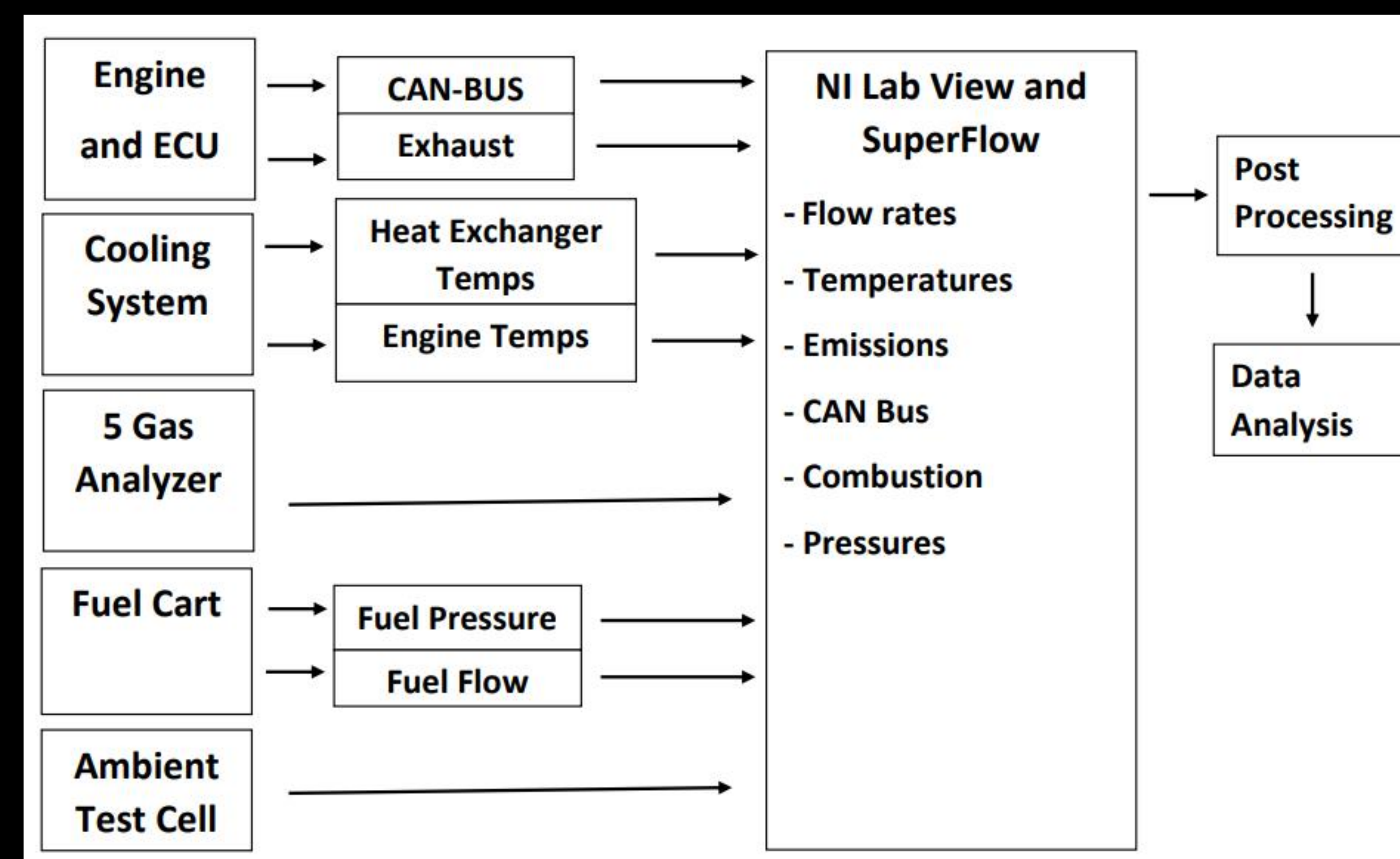
In - Service Emissions Test

Metric	Acceptable	Ideal	Current
Validate ODNT Results	Validate achieved results	Ensure all goals are met + Acceptable	Validated
Include In-Cylinder Pressure and Rotary Encoder Data within overall DAQ	DAQ reads and records all necessary inputs	Time stamps on data match + Acceptable	Validated (not functional)
Calibration meeting/surpassing SAE and CSC requirements	100+ Horsepower 17 MPG	110+ Horsepower 20 MPG	165 Horsepower 12.1 MPG
Emissions Target (Catalyst Selection/Placement)	6 grams/mile total emissions	< 5 grams/mile total emissions	39.15 g/mile total emissions
Documentation	Full, New User Self-Learn: 10 hours	Full, New User Self-Learn: 5 hours	Not Tested

I Engine Test Cell



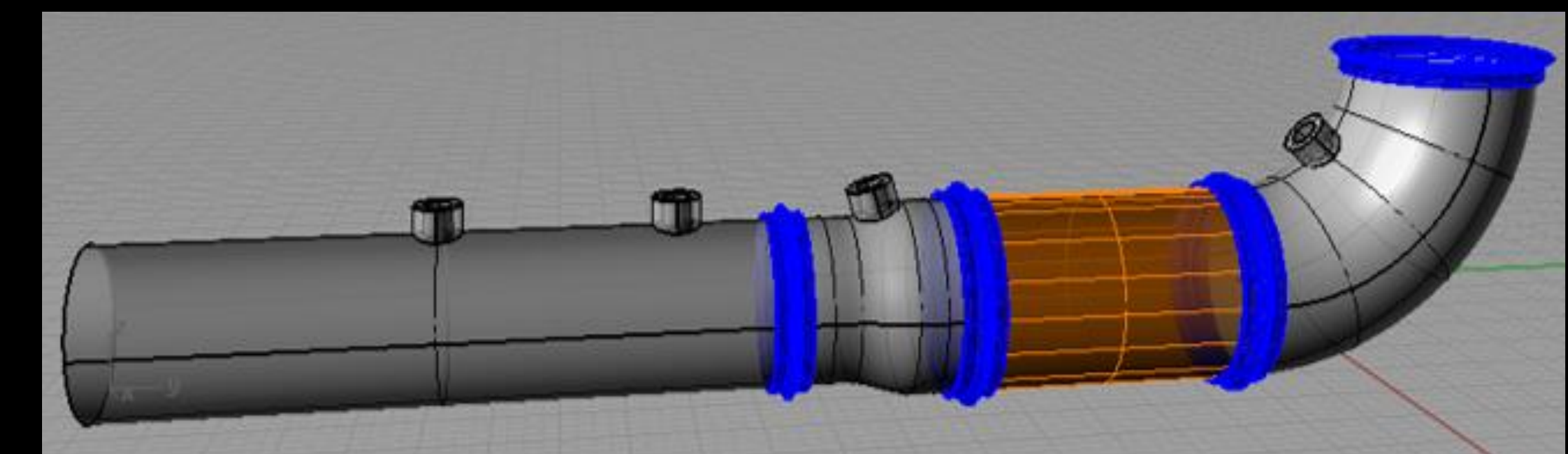
I Engine Test Cell Data Flow



I Deliverables

- Fully functional engine test cell
- Fast and accurate data acquisition
- Ability to test a multitude of catalysts

I Catalyst Research



Interchangeable Catalyst Test Pipe



I Acknowledgements

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 Dr. Kamal Kumar and Dr. Dan Cordon
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 Alex Kiss and UI CSC Alumni