Big Data and Analytics
Panel Session

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Aspects of Big Data for PHM

- Autonomous, through-life health-based asset management
  - Understanding of health
  - No inspections
  - Health based task / asset control
  - Condition-based rejection
  - Automatic supply chain
  - Tailored workscope

- Big data 4 V’s
  - Variety
  - Volume
  - Velocity
  - Veracity
Asset Usage Data Flow

Sense

Acquire

Engine Monitoring Unit

QAR, DFDR

Flight Log Sheets

Supply Chain

Operator

Overhaul

Others

Transfer

ACMS Reports via ACARS

Ground-based information, e.g. oil uplift

Ground Station

Global Network eg: SITA

Analyze

Sense

Acquire

Engine Monitoring Unit

QAR, DFDR

Flight Log Sheets

Supply Chain

Operator

Overhaul

Act

Others

Global Network eg: SITA
To achieve the goal, recognizing the complexity of the 4 V’s:

- Should engineering data be centralized, distributed, or just recognition that the data needs to be fused at some level (e.g. overhaul inspection reports with in-service vibration levels)?

- Would such technology naturally provide RUL (including unexpected events) leading to CBM. What degree of automation are we willing to allow?

- Are Big Data architectures able to join existing corporate IT systems into a common CBM enterprise solution?