NASA Langley Research Center

FIRST CENTER
Langley Memorial
Aeronautical Laboratory

NEW TECHNOLOGIES

COMMERCIAL & MILITARY
NASA Langley Research Center
Vertical Flight Heritage Site

May 8, 2015
Pioneering a Pathway to the Future

New Vertical Lift Technologies

New Missions

UAVs as "explorers"

as "atmospheric satellites"

Test Platforms

New Services

New Intelligent Flight System Technologies

as "inspectors" surveyors"
Partnering for Test Capabilities

Joint Based Langley-Eustis
VA MAAP
VA Institute of Marine Science
Private Restricted Fields

CERTAIN*

Industrial Settings
Wetlands
Fields
Urban environment

* City Environment for Range Testing of Autonomous Integrated Navigation
CERTAIN - A Phased Approach

SAFE – RELIABLE – ROBUST - REPEATABLE

Phase I

Indoor flight
Transitional flight
Overflight of scattered buildings and intermittent personnel
CERTAIN - A Phased Approach

SAFE – RELIABLE – ROBUST – REPEATABLE

Indoor T&E in Langley Autonomy and Robotics Center

- Over 70,000 cubic feet of operational flying space
- Indoor GPS Emulation (transparent to the data-dependent vehicle)
- Open architecture for easy integration of customer software
- DoD Messaging Standard (DDS) for seamless software interfaces
CERTAIN - A Phased Approach

SAFE – RELIABLE – ROBUST - REPEATABLE

Phase II

Wetlands
Clusters of buildings with routine Center functions
CERTAIN - A Phased Approach

SAFE – RELIABLE – ROBUST - REPEATABLE

Phase III

NASA Langley Research Center

Address the day-to-day challenges of flight over personnel, transportation, and facilities