

Fuel Certification and Qualification

Washington, DC
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Federal Aviation Administration


Panel Session Overview

- * Qualification Process Overview
 - * Mark Rumizen, FAA
- * D4054 Clearinghouse
 - * Steve Zabarnick, UDRI
- * IH² Candidate Sustainable Alternative Jet Fuel
 - * Joanna Bauldreay, Shell


How do we Certify SAJF?

New SAFJ Meets Existing Operating Limitations, Therefore Approved to Use on Virtually All Existing Aircraft

4 D1655 = D7566



Conventional Jet Fuel Spec



Drop-In Jet Fuel Spec



3 D7566 Drop-In Jet Fuel Spec



Then New SAJF Annex Added to Drop-In Fuel Spec

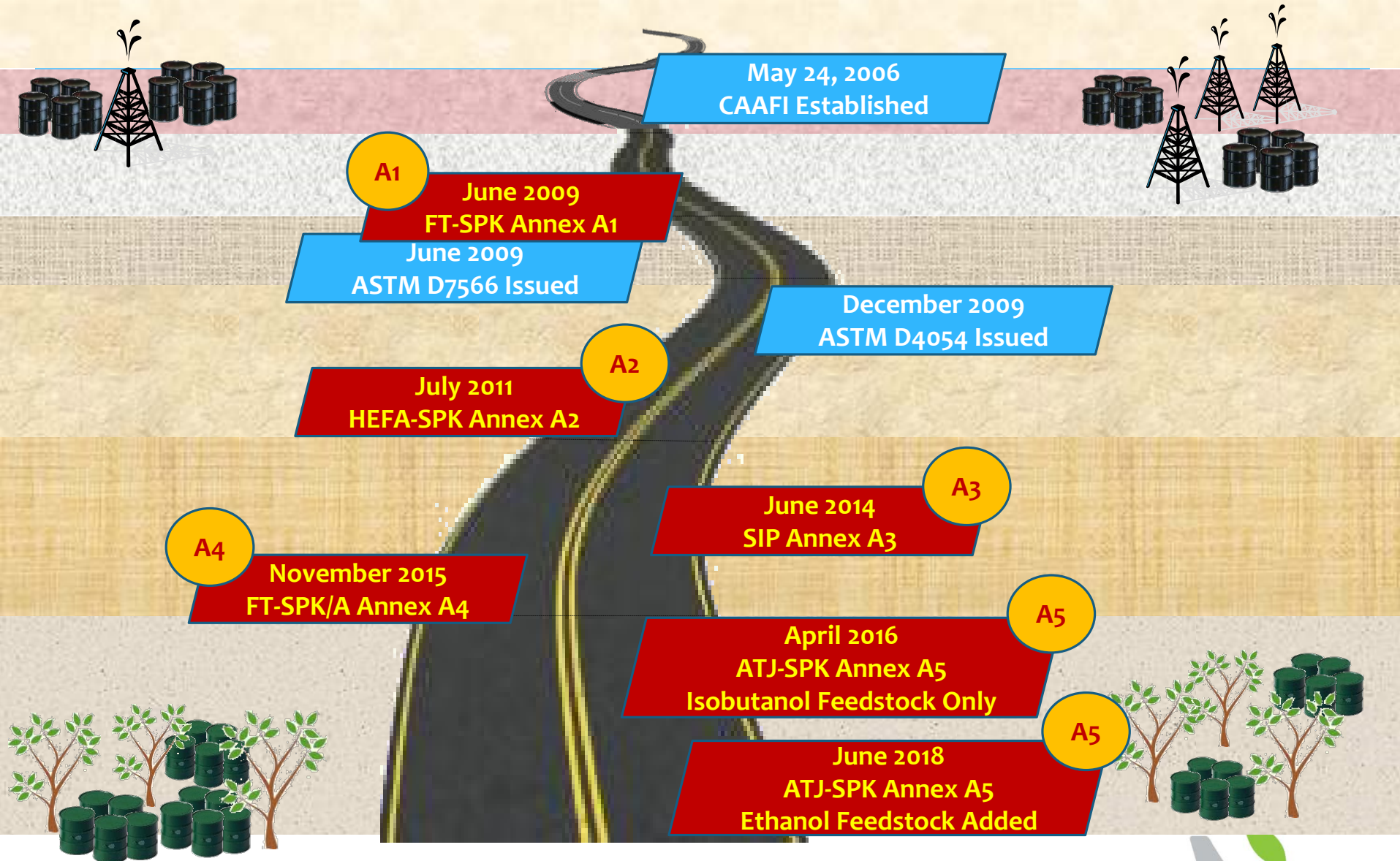


2 D4054 SAJF Evaluation Process

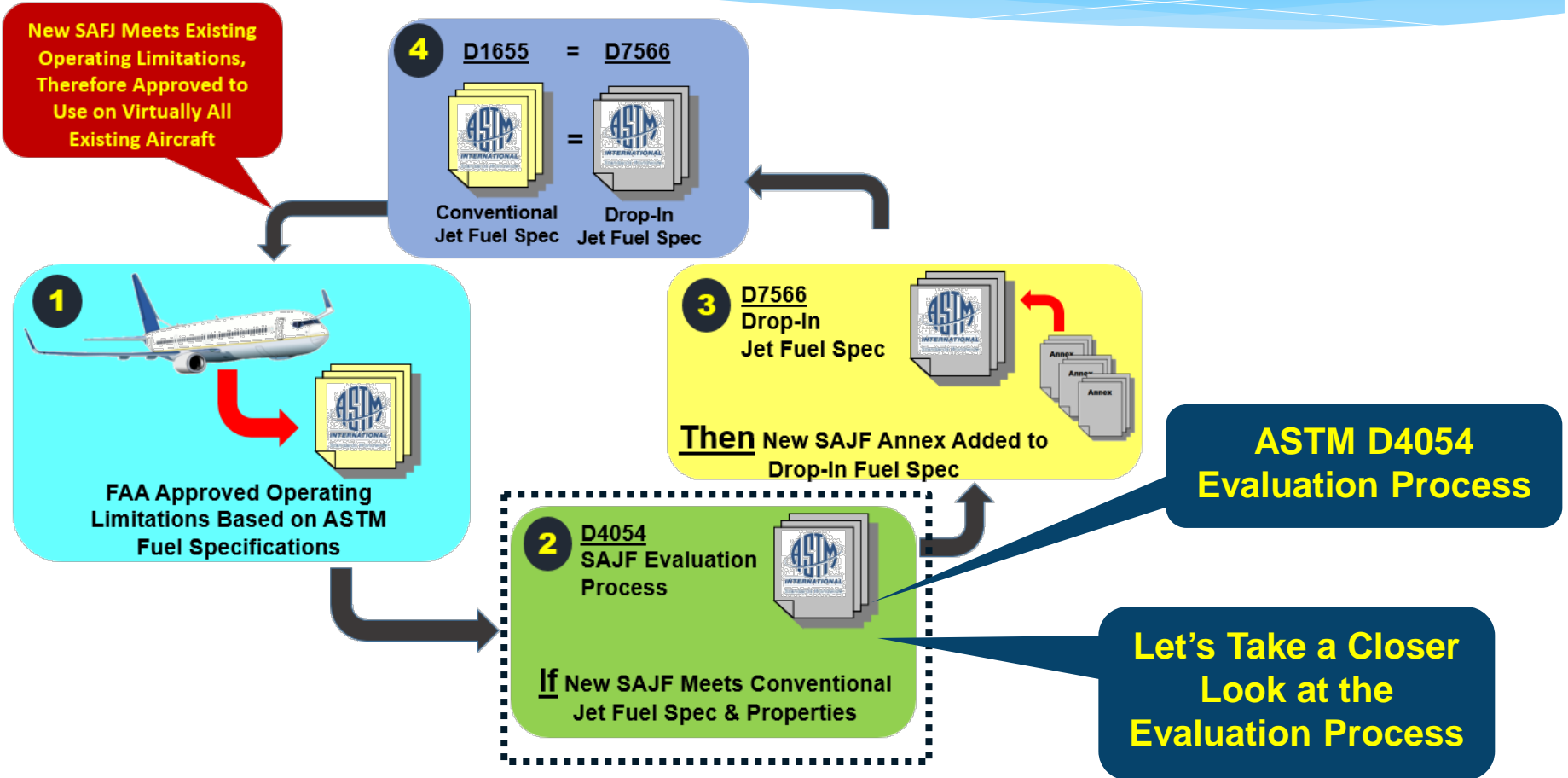


If New SAJF Meets Conventional Jet Fuel Spec & Properties

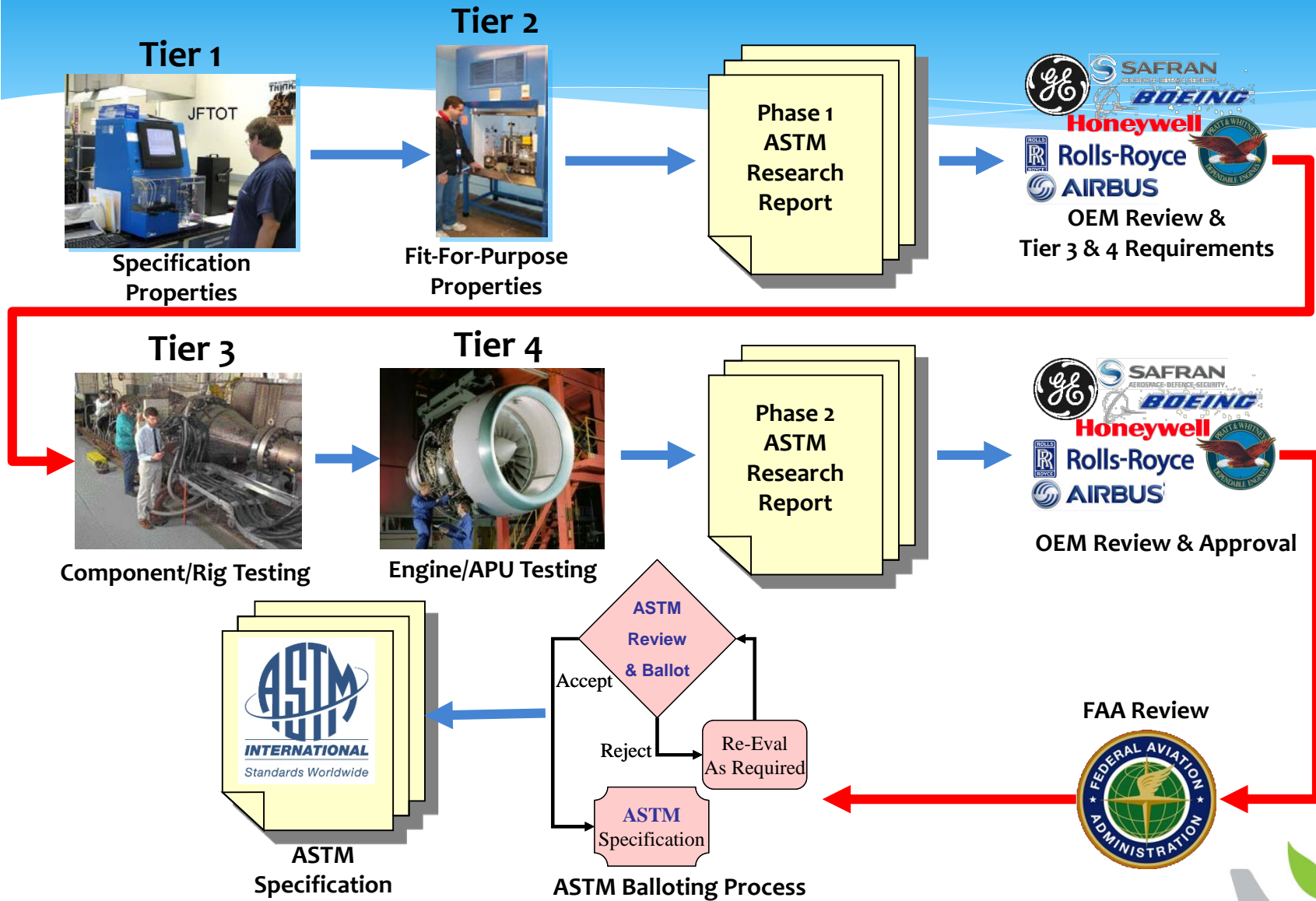
A Decade of Alternative Jet Fuel



Key Challenge in Process



D4054 Qualification Process

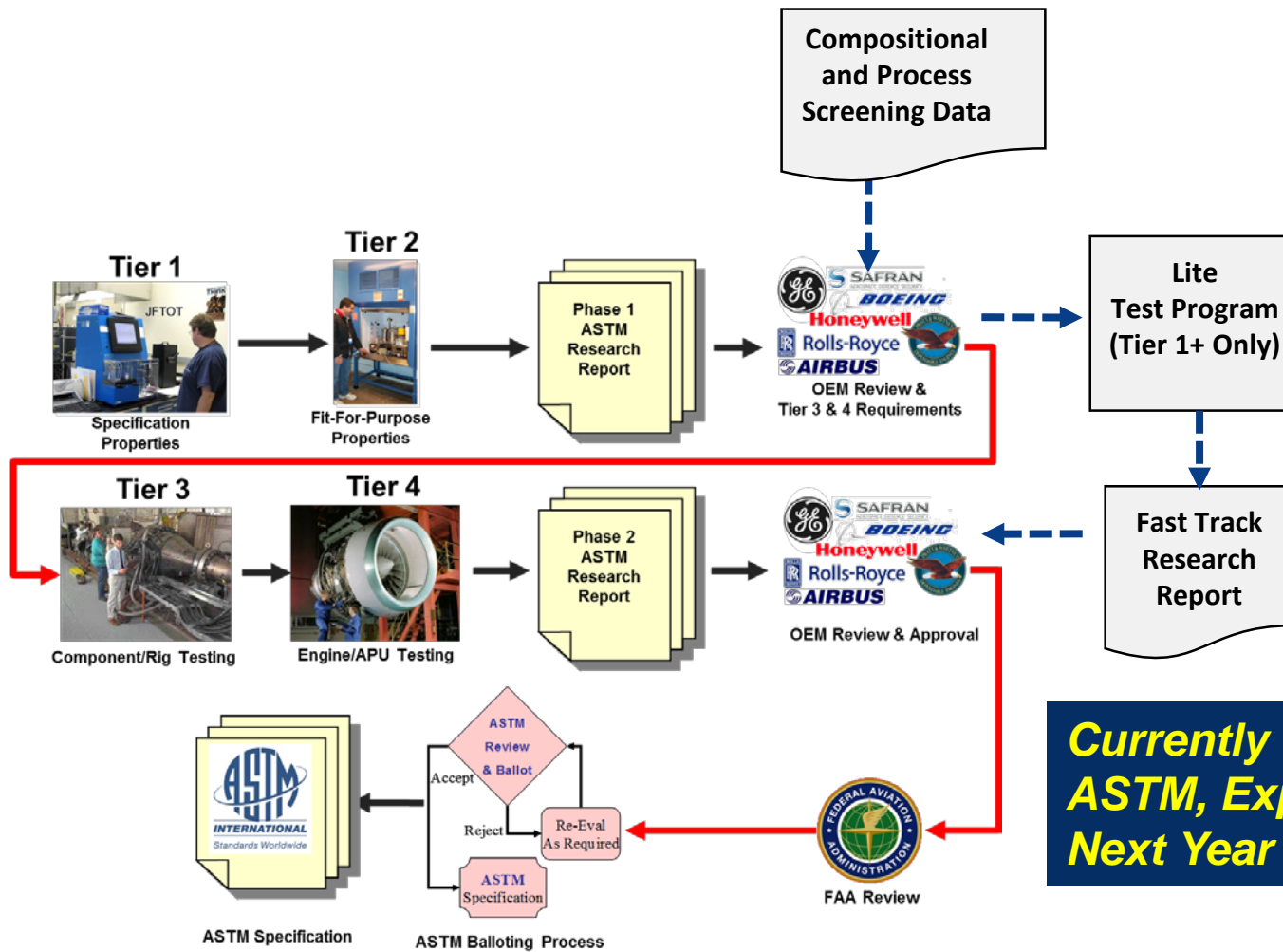


Process Improvement Initiatives

- * D4054 Fast Track Annex
- * D4054 Clearinghouse

D4054 Fast Track Annex

For SAJF with Conventional Compositions



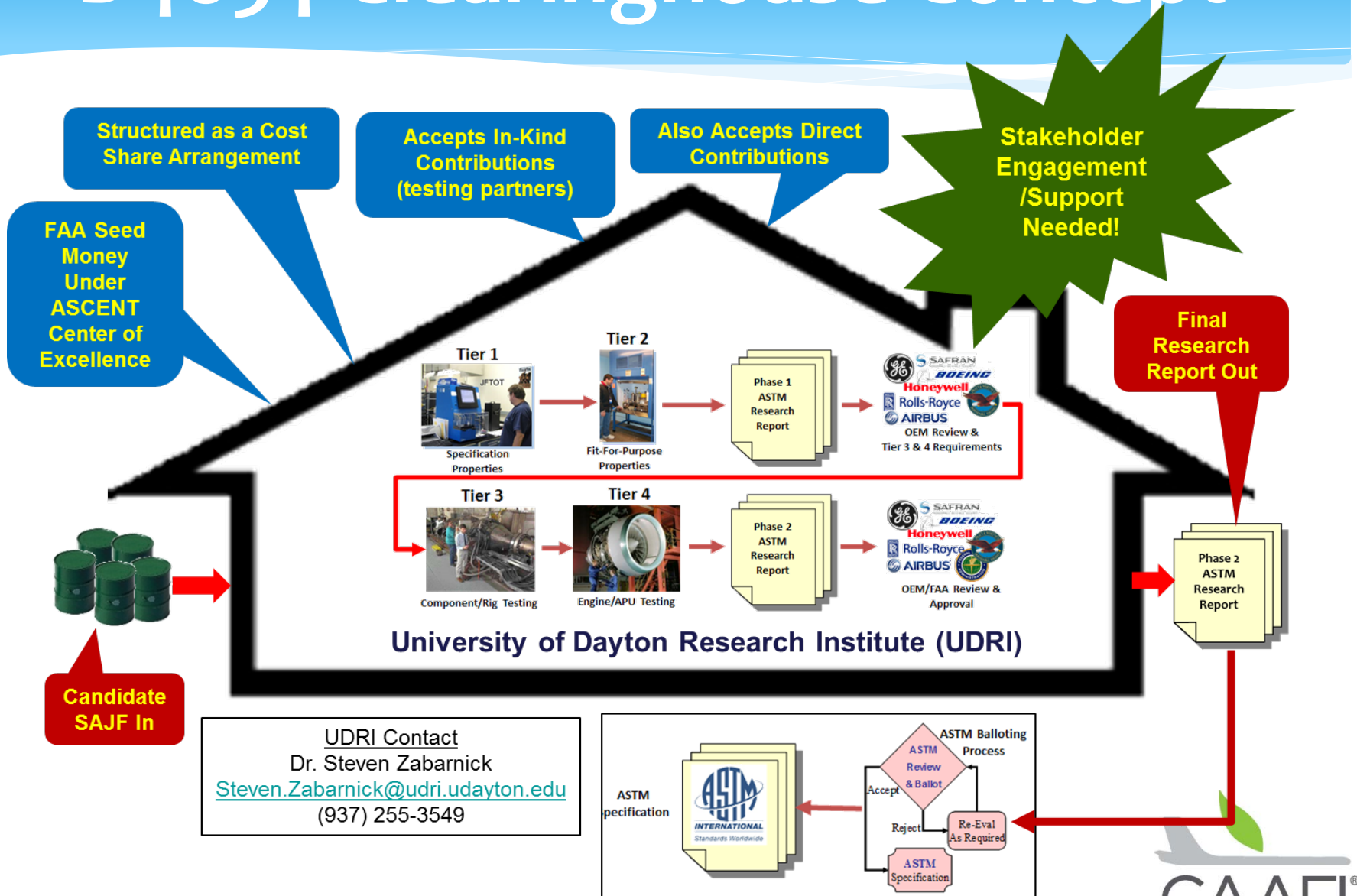
**Currently Under Review by
ASTM, Expect Approval Early
Next Year**



D4054 Clearinghouse

Dr. Steven Zabarnick
University of Dayton Research Institute

D4054 Clearinghouse Concept



Candidate Fuels in Queue

Exploratory Discussions

Global BioEnergies?

POET?

SBI BioEnergies?

Vertimas?

GSR/GTI?

Tier 1

Tier 2

Specification Properties

Fit-For-Purpose Properties



OEM Review & Tier 3 & 4 Requirements

HFP-HEFA (Green Diesel)

Shell IH²

IHI Bb-Oil HEFA

ATJ-SKA (Byogy, Swed Biofuels)

HDCJ (KiOR) (Inactive)

Virent SAK

Virent SK (Inactive)

ARA CHJ

Tier 3

Tier 4



Component/Rig Testing

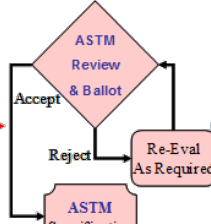


Engine/APU Testing



OEM Review & Approval

FAA Review



ASTM Balloting Process



ASTM Specification

Annex A1 FT-SPK

Annex A2 HEFA

Annex A3 SIP

Annex A4 FT-SKA

Annex A5 ATJ SPK (Isobutanol)

ATJ (Ethanol) added to Annex A5 April 1

Gantt Schedule for Current Fuels

