



# **ENERGY STAR®**

## **Central Air Conditioners & Air-Source Heat Pumps**

**Draft 2 Version 5.0  
Stakeholder Meeting  
September 23, 2014**

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# Agenda



- Welcome and Introductions
- ENERGY STAR Program Overview
- Overview of Specification Revision Process
- Reasons Driving CAC/ASHP Specification Revision
- Draft 2 Document Discussion
  - Performance Criteria
    - Independent Coil Manufacturers (ICM)
  - Other Changes
- Timeline and Next Steps

# What is ENERGY STAR



- **ENERGY STAR** is a voluntary government-backed program dedicated to helping individuals protect the environment through superior energy efficiency
- **ENERGY STAR** is the national symbol of energy efficiency, making it easy for consumers and businesses to identify high-quality, energy-efficient products
- **ENERGY STAR** distinguishes what is efficient/better for the environment without sacrificing features or performance
- Products that earn the **ENERGY STAR** meet strict energy performance criteria set by EPA

# 70+ Product Categories Are Covered by ENERGY STAR in the US



**Lighting**  
Residential lamps  
Residential light fixtures

**Home Envelope**  
Roof products  
Windows/Doors

**Heating & Cooling**  
Central AC  
Heat pumps  
Boilers  
Furnaces  
Ceiling fans  
Room AC  
Ventilating fans  
Water Heaters

**Office Equipment**  
Computers  
Monitors  
Printers  
Copiers  
Multi-function Devices  
Servers  
Storage  
UPS

**Commercial Food Service**  
Dishwashers  
Refrigerators  
Freezers  
Ice Machines  
Fryers  
Steamers  
Hot Cabinets  
Griddles  
Ovens  
Vending machines

**Appliances**  
Clothes washers  
Dishwashers  
Refrigerators  
Dehumidifiers  
Air cleaners  
Water coolers

**Home Electronics**  
Battery chargers  
Cordless and IP phones  
TV  
Set Top boxes  
Home audio

# Development Process

## Specification Development Cycle



# Guiding Principles for When to Revise ENERGY STAR Specifications



- Significant increase in market penetration of ENERGY STAR qualified models
- Change in the Federal minimum efficiency standards
- Technological advancements
- Product availability limitations
- Issues with consumers realizing expected energy savings
- Performance or quality issues
- Issues with test procedures

# Reasons for Specification Revision

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- Current specification, Version 4.1, has been in place since April 1, 2006. EPA considers specifications for revision at least every three years.
- New federal minimum efficiency standards will take effect in January 1, 2015. Some levels will meet or be close to the current ENERGY STAR levels.

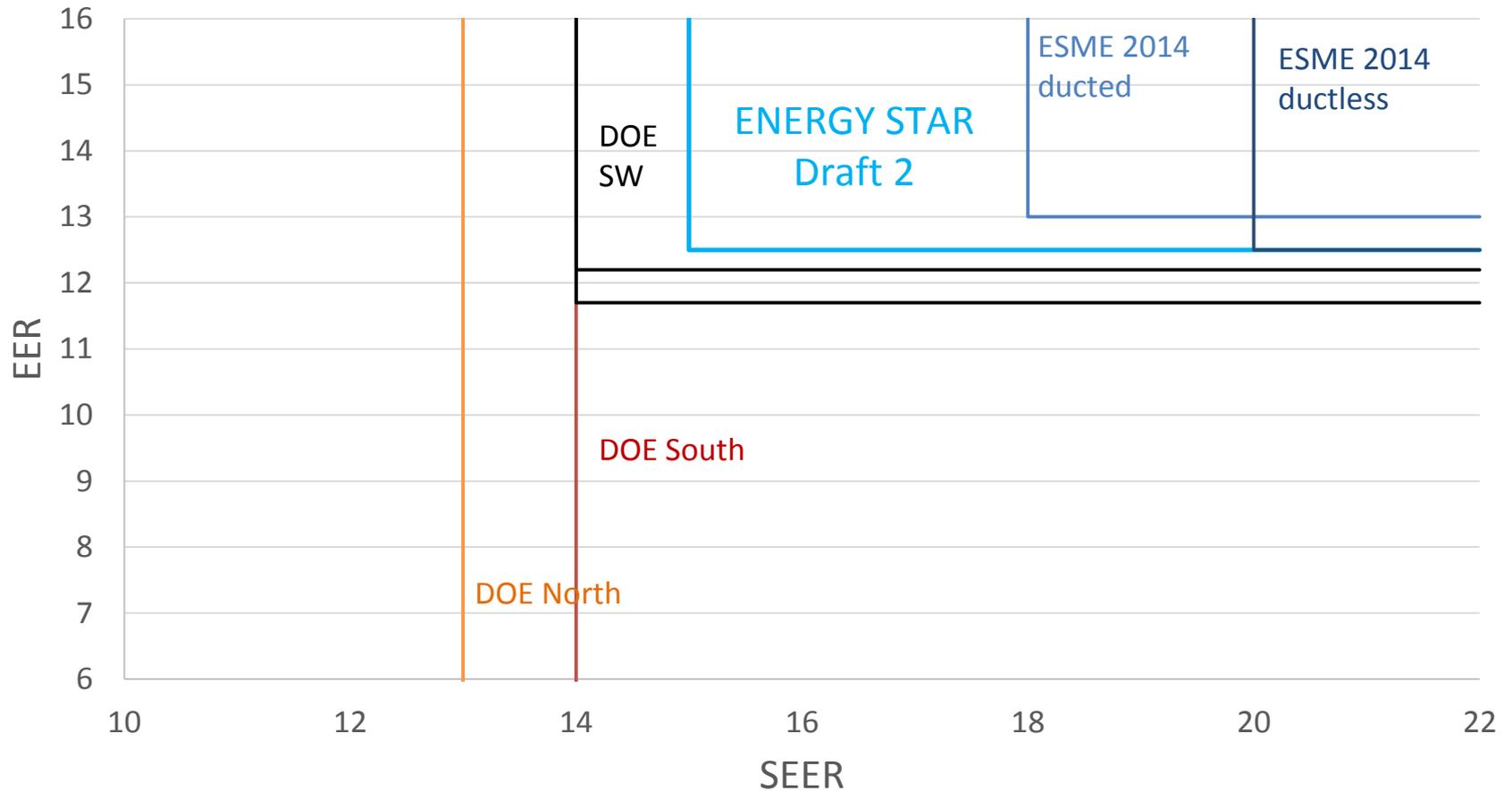
# Draft 2 – Performance Criteria



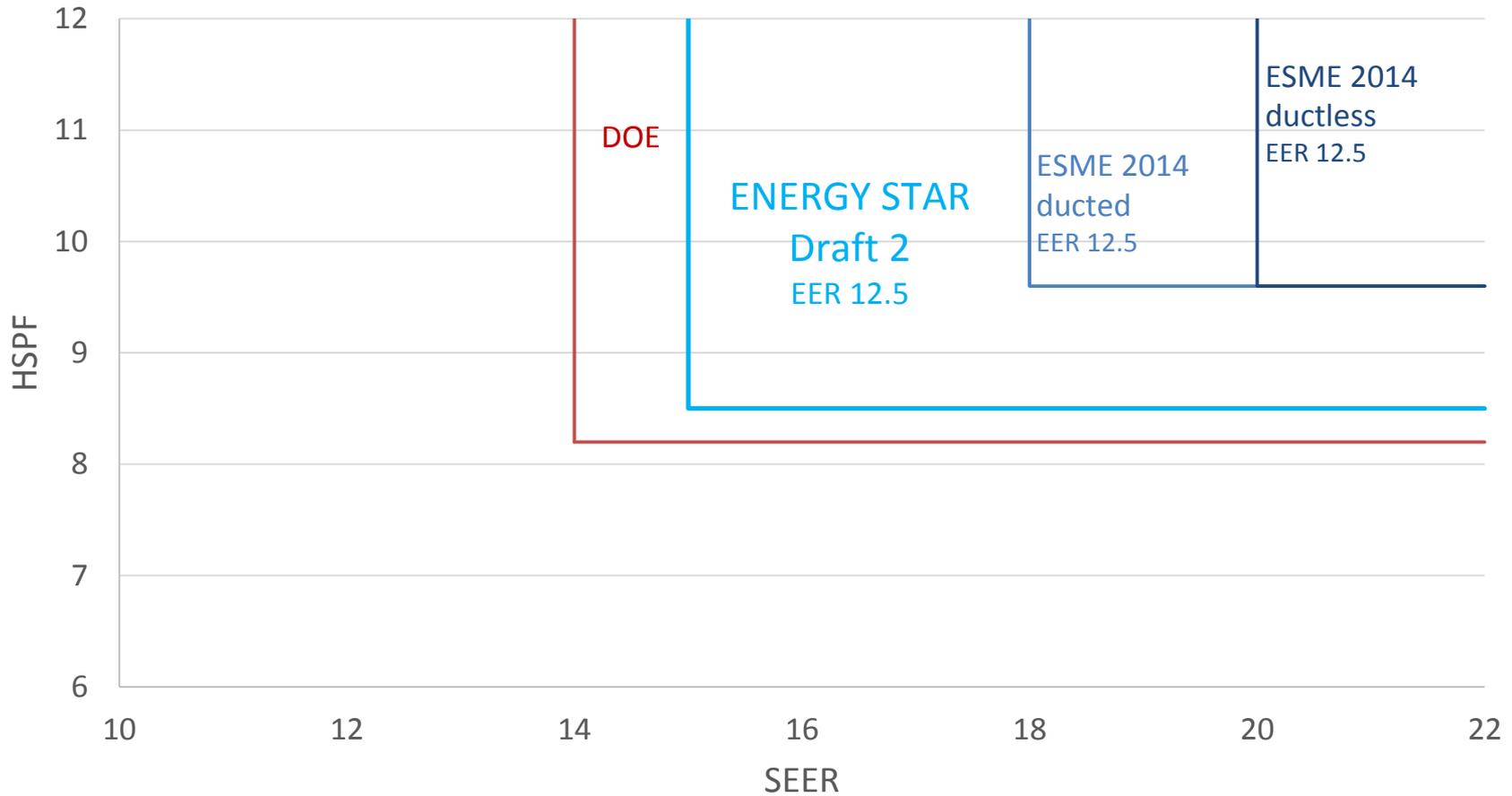
## Energy-Efficiency Criteria for Qualified Residential ASHPs and Central Air Conditioners (Changes in Blue)

<i>Product Type</i>		<i>SEER</i>	<i>EER</i>	<i>HSPF</i>
<b>CAC</b>	<b>Split System</b>	<b>≥ 15.00</b>	<b>≥ 12.50</b>	<b>N/A</b>
<b>ASHP</b>	<b>Split System</b>	<b>≥ 15.00</b>	<b>≥ 12.50</b>	<b>≥ 8.50</b>
<b>CAC</b>	<b>Single Package</b>	<b>≥ 15.00</b>	<b>≥ 12.00</b>	<b>N/A</b>
<b>ASHP</b>	<b>Single Package</b>	<b>≥ 15.00</b>	<b>≥ 12.00</b>	<b>≥ 8.20</b>

# Draft 2 – CAC Split Systems



# Draft 2 – ASHP Split System



# Draft 2 – Split System



- National requirements for all product types
  - Eliminates regional labeling
  - As the ENERGY STAR Verified HVAC Installation (ESVI) program has evolved, national requirements will work for mutual support of the program
- Split system levels aligned with CEE Tier 2 levels
  - Harmonizing with CEE levels increases consumer access to efficiency program rebates
  - Proposed levels present good consumer value in many situations

# Draft 2 - Add ICM coil combinations



- Proposed scope of specification changed to include combinations with coils from independent coil manufacturers (ICMs)
- ENERGY STAR is still awarded to a combination, not the coil itself
- Provides an ENERGY STAR HVAC option for consumers who need an ICM combination
- For Unit Shipment Data, EPA plans to require ICMs to report shipments to or within U.S. of qualified ICM coils
- Inclusion of ICM combinations does not change percent availability of ENERGY STAR qualifying combinations

# Draft 2 - ICM combination verification

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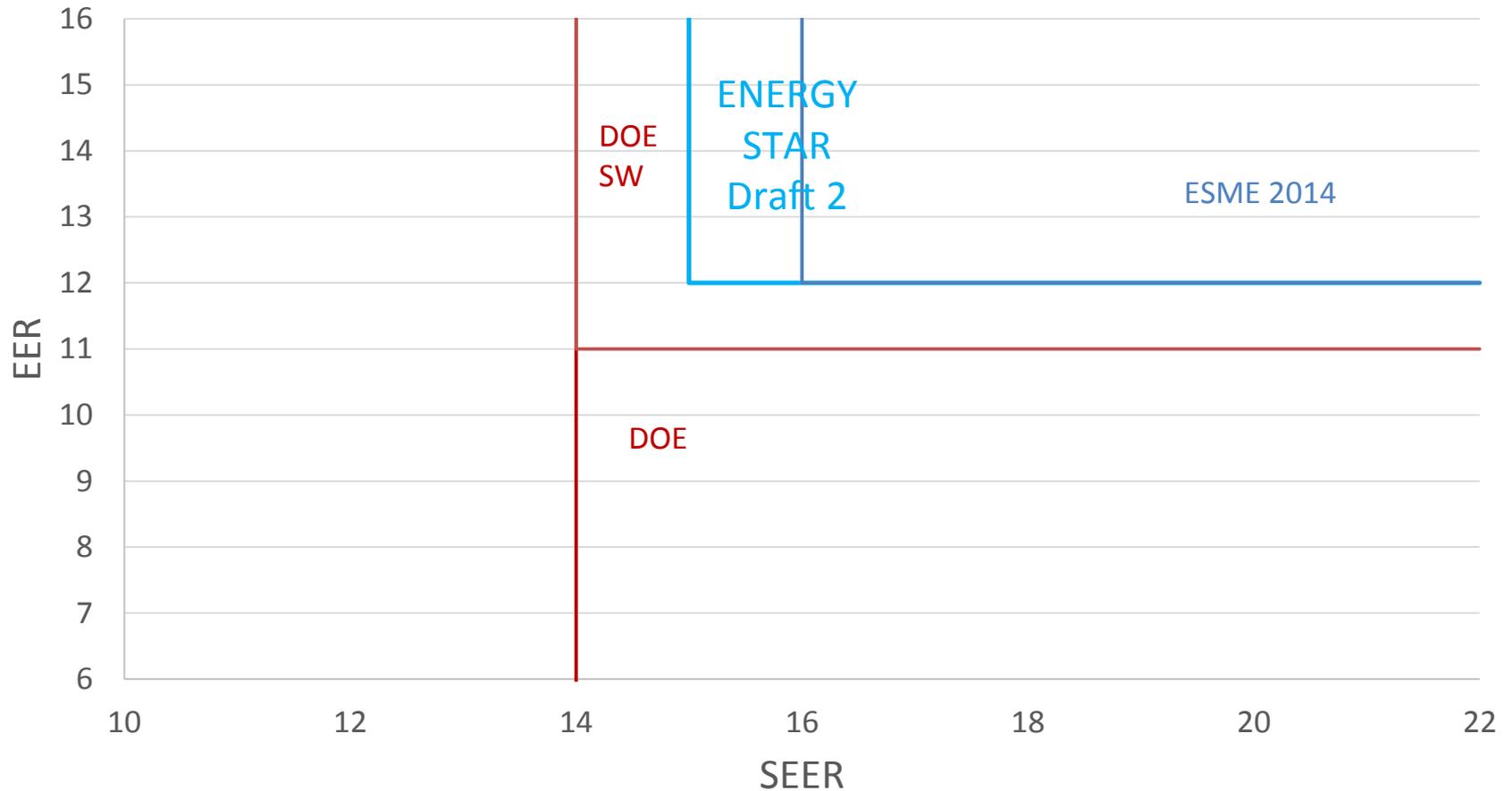
- EPA accepts same rating methods as DOE, so CBs may certify ARM ratings
- Verification requirements are the same as for other ENERGY STAR products
- Verification process modeled on AHRI process, allows for ICM to use different CB than system manufacturer
- Goal: same rigor for ICMs and system manufacturers.

# Draft 2 – ICM combination verification test (VT)

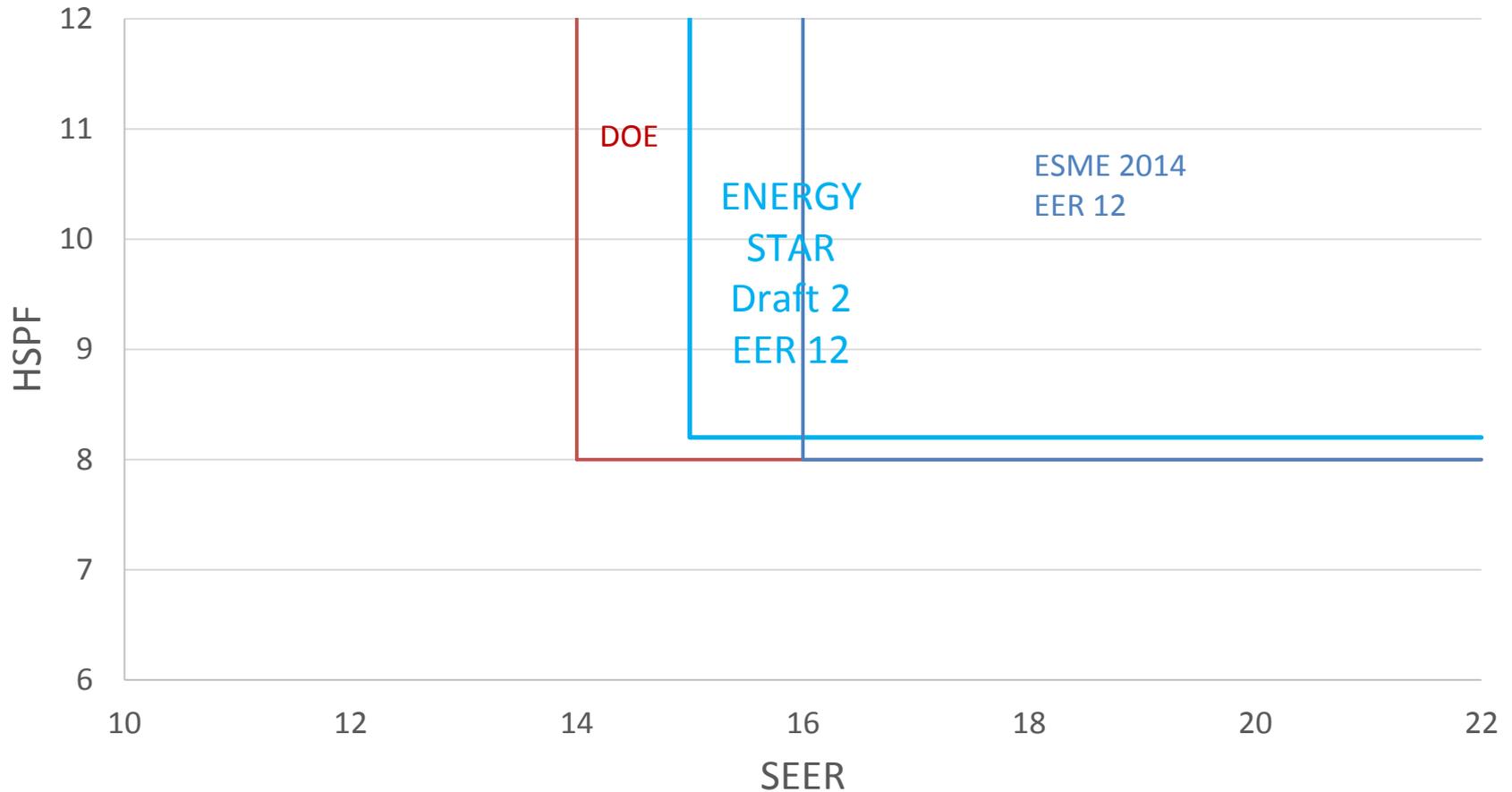


- ICM coils to be tested with the outdoor unit (OD) saved from a System combination VT
- If ICM chooses a CB different from the System manufacturer, then ICM pays for the procurement cost of the OD
- If test with first OD fails, ICM has option to test with different model OD & disqualify combinations with first tested OD

# Draft 2 – CAC Single Package



# Draft 2 – ASHP Single Package



# Draft 2 – Single Package



- Aligned CAC and ASHP requirements
  - Low volume products – alignment allows more economical offerings
- EPA welcomes suggestions on what to do about disparate model availability – 45% of CAC and 6% of ASHP meet the proposed levels

# Draft 2 - Other Changes



- Definitions revised to include
  - Independent Coil Manufacturer – A manufacturer that manufactures only the indoor unit (coil) in a Central Air Conditioner or Air-Source Heat Pump Split System.
  - System Manufacturer - A manufacturer that manufactures all the major assemblies in an Air-Source Unitary Heat Pump and/or Unitary Air-Conditioner.

# Specification Development Timeline

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- Sep 15, 2014 Draft 2 published
- Sep 23, 2014 Stakeholder Webinar
- Oct 10, 2014 Draft 2 comment period ends
- Nov 2014 Final Draft published
- Dec 2014 Final published
- Sep 2015 V5.0 Effective Date

# Contact Information

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# Questions?



**Thank You**



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