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Santa Clara Marriott  
Santa Clara, CA

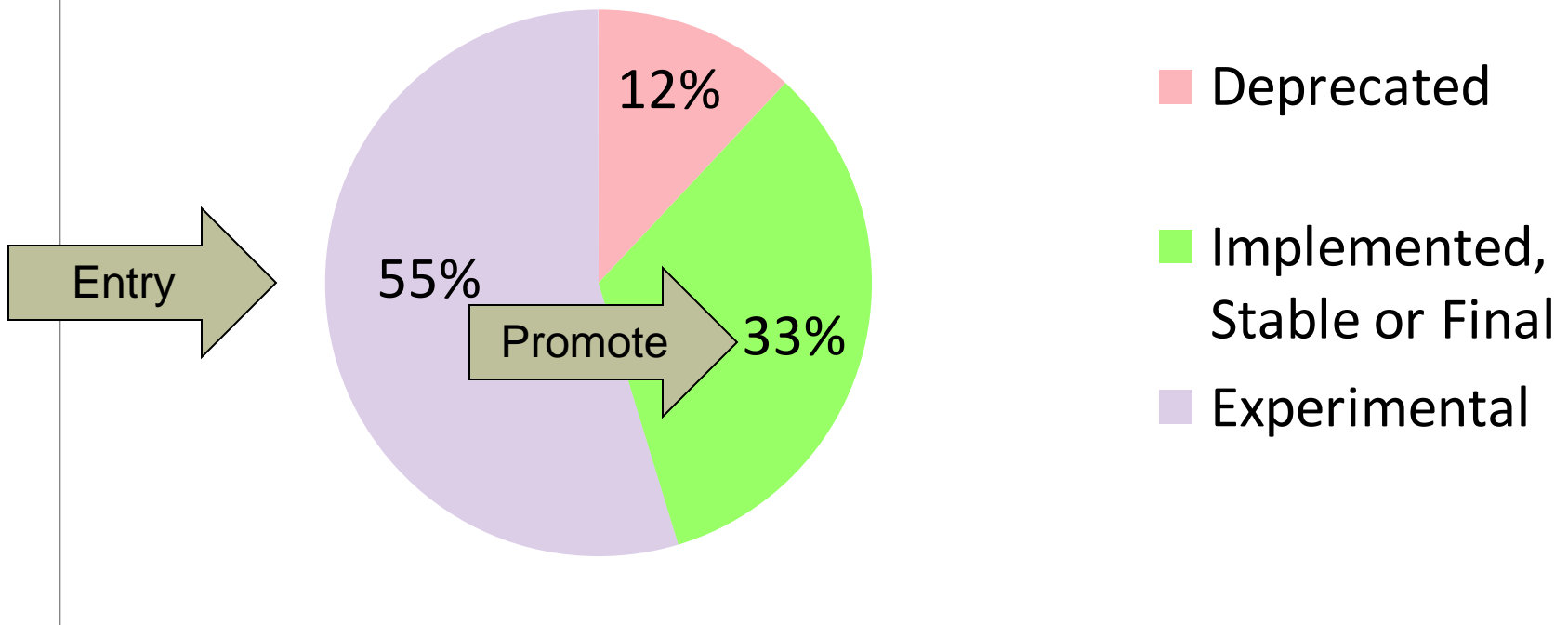
# **SMI-S and the Role of SMI**

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The SMI Process for Standardization

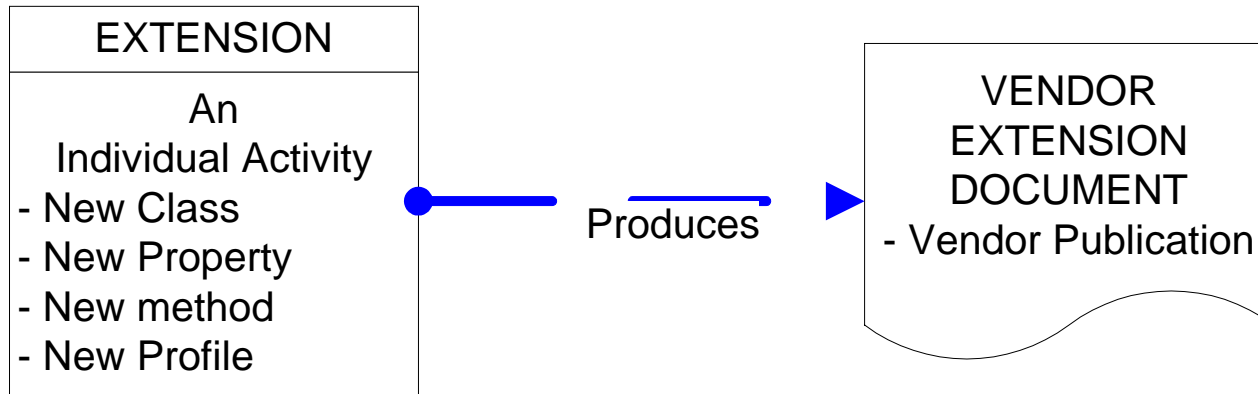
# SMI-S 1.5.0 Maturity

## Profile Maturity



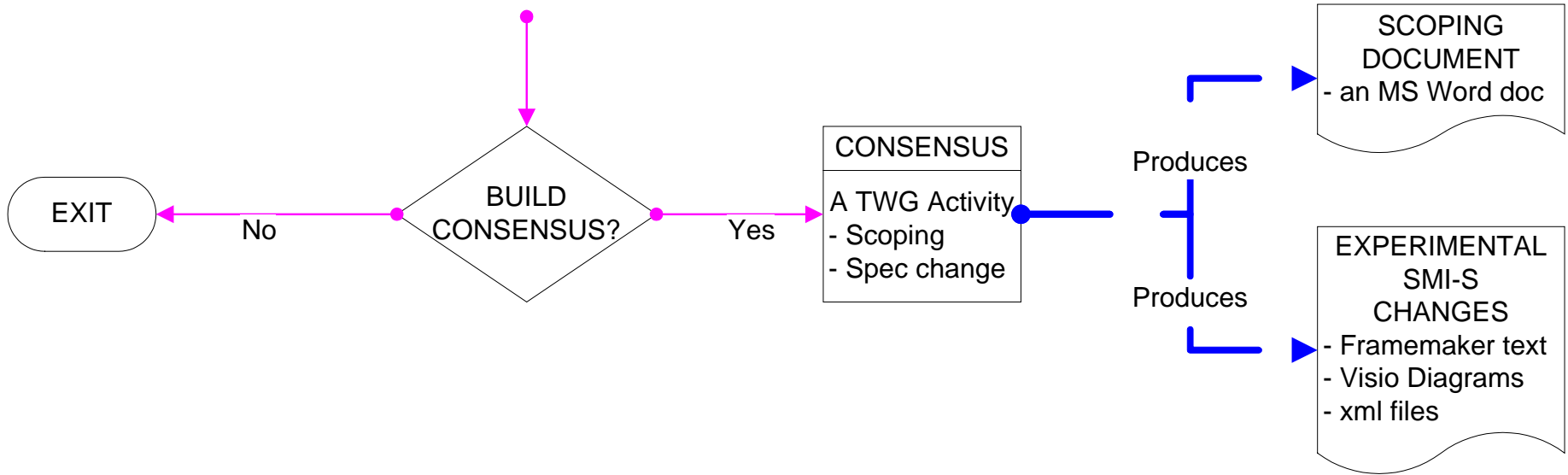
- Extending SMI-S
  - An individual activity
- Building consensus
  - A TWG activity
- Testing a proposal
  - An SMI-Lab activity
- Validating conformance
  - A CTP activity

# Extending the Standard



- SMI-S is based on CIM (Common Information Model), which is extensible.
- Vendors can extend SMI-S by adding classes, properties, methods and/or profiles—to perform functions their devices support.
- Extending SMI-S requires only the initiative of a single individual in a single company.
- Individual companies have extended SMI-S numerous times.

# Building Consensus – The Steps



1. Decide if you want/need consensus. (See [Considerations](#))
2. Develop a Scoping Document to limit the scope of work. (See [Scoping Document Purpose](#))
3. Develop Experimental Spec changes. (See [Changing the Spec](#))

# Building Consensus – The Players

- Champion
  - Individual that has a proposal to extend SMI-S
- Technical Work Group (TWG)
  - Group that reviews the Scoping Document & initial specification work
  - Group in which consensus is achieved
  - Example: Array changes would be worked out in the DRM TWG.
- Author
  - Individual that owns the profile to be added or changed

## PARTICIPATION IN TWG MEETINGS IS IMPORTANT:

- To get **your** extensions into the standard
- To prevent other vendor extensions from inadvertently ruling out your device functions

# Building Consensus – Considerations

Should you take your extension to SMI-S?

## YES

- The extension will likely be done by another vendor.
  - You don't want to risk a re-design if another vendor brings the extension forward.
- You want or need client application support.
- You want other vendors to follow your company's lead.
- The extension calls for industry agreement. (Time to Market)

## NO

- The extension is truly unique to your vendor.
  - You can risk a re-design should another vendor bring the extension forward.
- You don't want or need client application support.
- You plan obsolescence of an extension that you support only for existing customers.



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# Building Consensus – Scoping

- The purpose of a *scoping document* is to outline the desired changes in sufficient detail to eliminate “scope creep.”
  - A TWG will review and comment on the extension.
  - You need to protect yourself from “amendments” to your proposal that will make you “boil the ocean.”
- The TWG votes on accepting the defined scope of the work.
- Once a scoping document is approved, the scope of work is set.
- Writing a scoping document includes solicitation of other vendors that intend to implement the extension.
  - This ensures that affected parties participate in the design of the work.



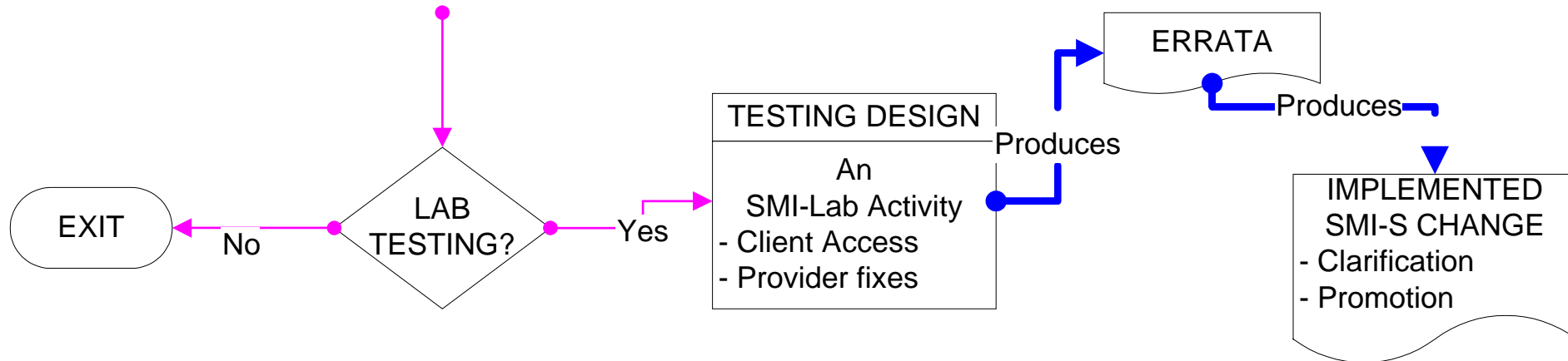
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# Building Consensus – Changing the Spec

- As soon as the scope of work is settled, the next step is to document changes to the spec. Changes may involve:
  - FrameMaker text
  - Diagrams
  - Class tables (as documented in xml files)
- If the change is a new profile, the champion of the scoping document may become the owner of the profile files.
- If the change is an update to an existing profile, the champion will work with the author of affected profile(s).
- Changes are voted into the specification by the TWG (and approved by the TSG).



# Testing a Proposal – SMI-Lab Program



- SMI-S does not stop with creation of the standard.
  - The next step is to verify the standard in a lab environment.
  - SMI-S material that is not verified stays Experimental in the standard.
- The SMI mechanism for this verification is the SMI-Lab Program.
- SMI-Lab brings Client applications and Provider vendors together to work out problems with the standard.

# Testing a Proposal – SMI-Lab Players

- Client Application Vendors
  - Have VPN access to all providers in the lab to develop and debug support for various providers in the lab
  - Perform early “proof of concept” testing of new extensions
  - Are encouraged to go to Plugfests for direct interaction with provider vendors
  - Work out kinks in new extensions to the standard
- Provider Vendors
  - Are encouraged to put their latest providers in the lab to expose their functions to client application vendors
  - Obtain early versions of the CTP Tests for the SMI-S Release under test
    - CTP Tests are developed for extensions in the latest release.
  - Expose new extensions to debugging

# Testing a proposal – Participation

- Participation in SMI-Lab is critical:
  - To get extensions **promoted** from Experimental to Final. Testing of SMI-S extensions in SMI-Lab is key.
  - To fix specification problems
  - To clarify ambiguities in the specifications
  - To verify that clients' applications can handle variations between provider implementations
  - To ensure your company is “wired into” last minute errata and other fixes to the standard
- The more vendors that exercise the standard (and extensions to the standard), the more robust and useful the standard becomes.
- The SMI-Lab Program is a fee-based program that requires annual renewal.

# Testing a proposal – Considerations

Should your company participate in SMI-Lab?

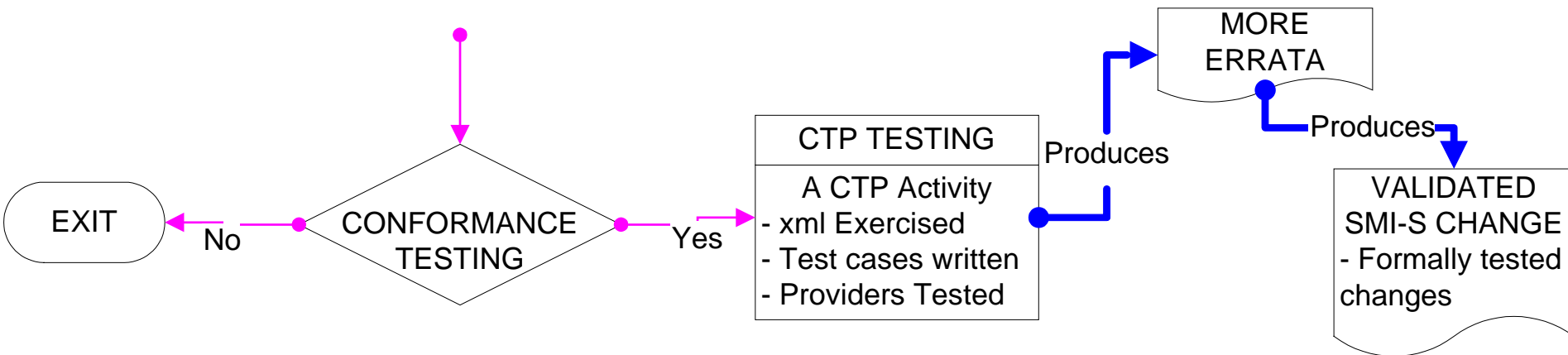
## YES

- You want an extension promoted from Experimental.
- You want support from client applications.
  - Speed up development of new features of SMI-S
- You want CTP testing of the extension. (see [Validating Conformance](#))
- You want to speed up your development process.

## NO

- Experimental is good enough.
  - No rush to get it promoted
- You don't need client support.
- You don't need CTP tests for the extension.

# Validating Conformance – Conformance Test Program (CTP)



- The Conformance Test Program formalizes the informal testing of SMI-Lab to advertise conformant provider implementations.
- Testing minimally includes “model walking” but can also include “recipe test cases” to exercise specific functions.
- Testing generates more errata to fix the standard.
- Vendors that pass the CTP test can be listed on CTP web pages advertising their conformance.
  - Indicates which profiles and functions passed the conformance test

# Validating Conformance – CTP Players

- The SMI Conformance Committee
  - Composed of representatives from member companies
  - Owns and writes the CTP Test Plans and Test Specifications
  - Approves the release of test suites
- A Contractor
  - Develops and maintains the Test Harness
- The CTP Program Manager
  - Administers the CTP program
- Vendors willing to exercise the tests
  - Have their providers tested

Note: If there is no vendor for a profile, no test is released for that profile.

# Validating Conformance – What gets tested

- A CTP release DOES NOT test all of SMI-S.
  - Only profiles and functions supported by SMI-Lab members are considered.
  - SMI needs implementations to test the test suite.
    - This eliminates a great number of profiles from the Test Suites
- If *multiple* SMI-Lab members test a profile, then that profile can be made an official part of the release of CTP.
- If only *one* SMI-Lab member tests a profile, then that profile can be listed as an **Early Adopter** profile for the release of CTP.
- If a profile has a maturity of **Experimental** in SMI-S, then it can only be listed as an **Early Adopter** profile even though multiple vendors have tested with it in SMI-Lab.

# Validating Conformance – Participation

- Participation in CTP is critical:
  - To get test cases released
    - No company is required to participate in SMI-Lab or CTP, but if no company is willing to exercise tests for a profile, that profile never appears in any CTP release.
  - To fix specification problems
  - To clarify ambiguities in the specification. These show up in testing.
  - To ensure your company is “wired into” last minute errata and other fixes to the standard
- CTP is a fee-based program.
  - If you belong to SMI-Lab, you may exercise test suites without a fee for unofficial results.
  - Listing official results on CTP web pages requires payment of a fee.

# Validating Conformance – Considerations

Should your company participate in CTP?

## YES

- Your company wants to ensure that other vendors have implemented the extension correctly.
- Your company wants CTP testing of the extension.
- Your company wants to be listed on the CTP web pages so that customers know you have implemented the extension.

## NO

- Your company does not want to ensure that other vendors have implemented the extension correctly.
- Your company does not need or want CTP tests for the extension.
- Your company does not need or want to advertise implementation of the extension on CTP pages.

# Summary

- Vendor Extension Only
  - Builds on SMI-S to provide vendor-specific function
- SMI-S Experimental Material
  - Reviewed and blessed by architects, but implementations are either pending or limited
- SMI-S Implemented (or Stable) Extension
  - Exercised in SMI-Lab and verified to work as designed.
- SMI-S Tested Extension (listed on CTP pages)
  - Completed formal testing via the Conformance Test Program

**Ideally all of SMI-S would be tested, but this cannot happen without vendor participation.**