OWASP
Open Web Application Security Project

OWASP Software Assurance Maturity Model (SAMM)

Version 2.0 Update

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About Me

- Born and raised in northeastern US
- Spent A LOT of time in school
- First career: Operations Research / Simulation
- Second career: Web Development
- Third Career: Application Security, since 2014
  - Focus on Software Assurance
  - Moved to NZ in 2017, joined Orion Health
  - Active in OWASP in US and NZ
- Joined OWASP SAMM team in June

What is SAMM?

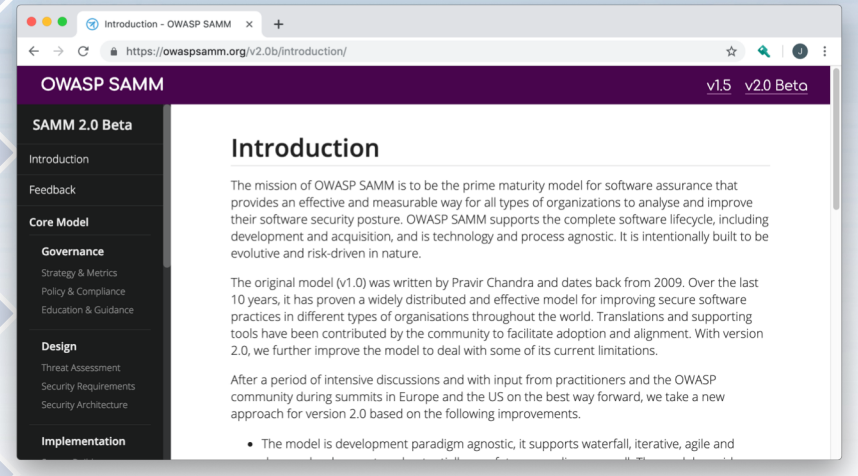
- The Software Assurance Maturity Model (SAMM) is an open framework to help organizations formulate and implement a strategy for software security that is tailored to the specific risks facing the organization.
- The resources provided by SAMM will aid in:
  - *Evaluating an organization's existing software security practices.*
  - *Building a balanced software security assurance program in well-defined iterations.*
  - *Demonstrating concrete improvements to a security assurance program.*
  - *Defining and measuring security-related activities throughout an organization.*

Why SAMM?

”The most that can be expected from any model is that it can supply a useful approximation to reality: All models are wrong; some models are useful.” – George E. P. Box

Core Principles of SAMM

An organization's behavior changes slowly over time	• Changes must be iterative while working toward long-term goals
There is no single recipe that works for all organizations	• A solution must enable risk-based choices tailored to the organization
Guidance related to security activities must be prescriptive	• A solution must provide enough details for non-security-people
Overall, must be simple, well-defined, and measurable	• OWASP Software Assurance Maturity Model (SAMM)



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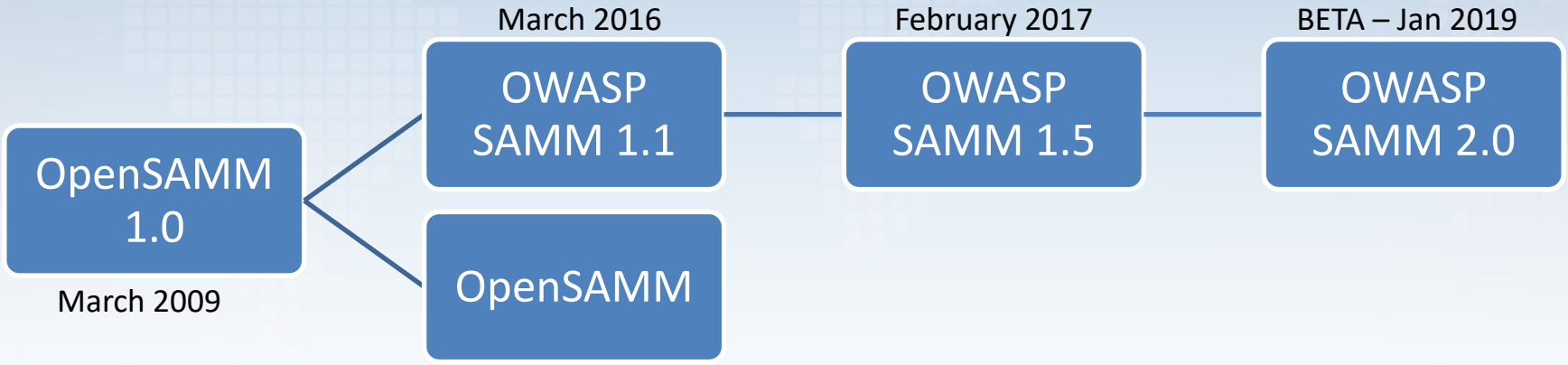
Project History



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The Core Team

- Sebastien (Seba) Deleersnyder – *Project Leader,* Belgium
- Chris Cooper – *Webmaster*, United Kingdom
- Bart DeWin – Belgium
- John DiLeo – New Zealand
- Daniel Kefer – Germany
- Nessim Kisserli – United Kingdom
- Yan Kravchenko – United States

The Core Framework

Version 1.5

Four Business Functions

- Governance
- Construction
- Verification
- Operations

Version 2.0

Adds a Fifth Business Function

- Governance
- **Design**
- **Implementation**
- Verification
- Operations

The Security Practices

- **Governance**
  - Strategy & Metrics
  - Policy & Compliance
  - Education & Guidance
- **Design**
  - Threat Assessment
  - Security Requirements
  - Security Architecture
- **Implementation**
  - Secure Build
  - Secure Deployment
  - Defect Management
- **Verification**
  - Architecture Assessment
  - Requirements-Driven Testing
  - Security Testing
- **Operations**
  - Incident Management
  - Environment Management
  - Operational Management

The Maturity Levels

OWASP SAMM - 3 levels

- Level 1
- Level 2
- Level 3

Rough alignment with CMMI levels

1 Initial

2(a) (Partially) Managed

2(b) (Fully) Managed

3 Defined

4 Quantitatively Managed

5. Optimising

Activity Streams
Example – Operational Management

A: Data Protection

Level 1: Basic Data Protections in Place

Level 2: Data cataloged and data protection policy established

Level 3: Data policy breaches detected and acted upon

B: System Decomm / Legacy Management

Level 1: Identification of unused apps/services

Level 2: Decommissioning and legacy migration processes in place

Level 3: Proactive handling of legacy applications/ services

Pain Points with Scoring in SAMM 1.5

Strategy & Metrics, Level 1: *Is there a software security assurance program in place?*

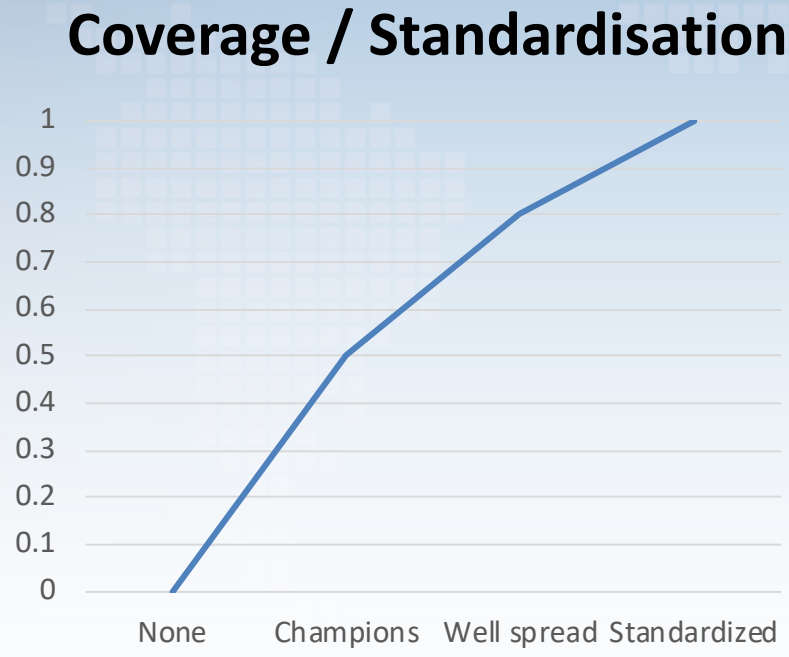
Available Responses:

- *No*
- *Yes, it's less than a year old*
- *Yes, it's a number of years old*
- *Yes, it's a pretty aature program*

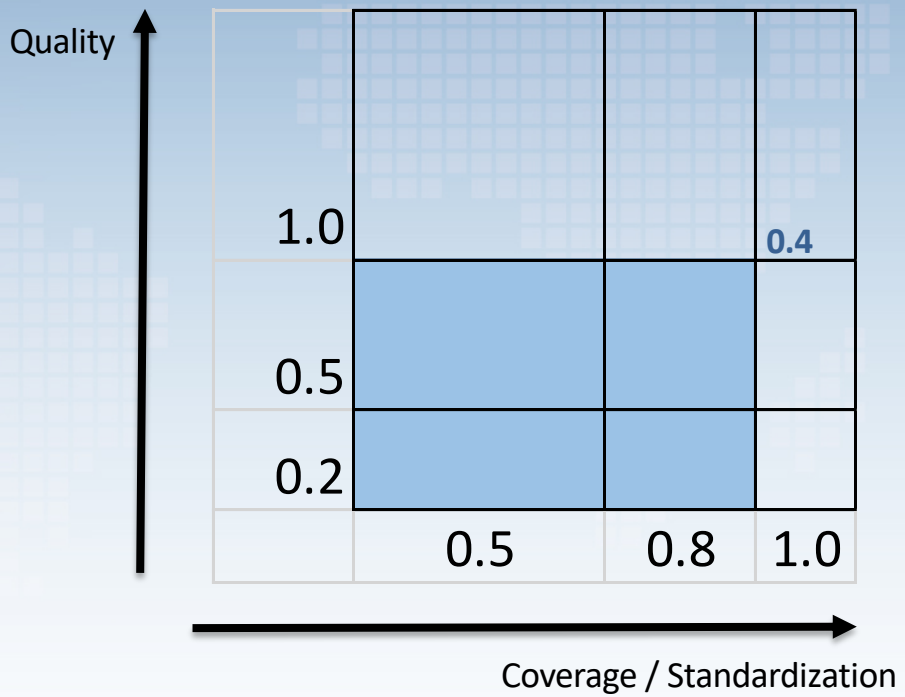
But, what about…

- Quality of the Programme?
- Currency of the Programme? Has it been reviewed/updated?
- How do you know the program is still relevant?

Consider Multiple Dimensions



Combining Dimension Scores



MATURITY SCORE = QUALITY × COVERAGE

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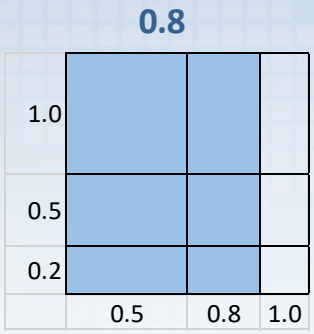
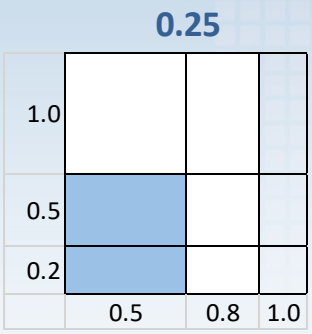
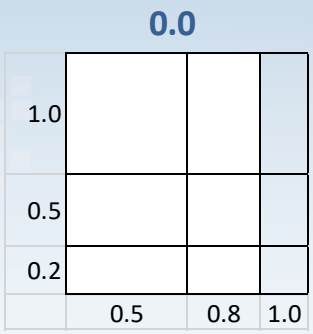
Education & Guidance Practise



Level 1
Relevant employees
are provided
an awareness training



Level 2
Employees are provided
role specific trainings



Level 3
Employee‘s knowledge
is regularly assessed

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Open Questions

- Number of response values for quality and coverage questions
  - Four? Five?
  - Linear?
- How to compute overall maturity score from individual metric scores across levels
  - Level 2 way more expensive than Level 1

Interested in Getting Involved?

- Provide comments on the current draft
  - https://owaspsamm.org/v2.0b/feedback/
- Join our monthly project calls
  - Second Wednesday of the month, 9:30 p.m. Central European Time
  - That translates to Thursday morning, at 7:30 or 9:30 a.m.
- Join our Slack Channel
  - #project-samm on the OWASP Slack (https://owasp.slack.com/)