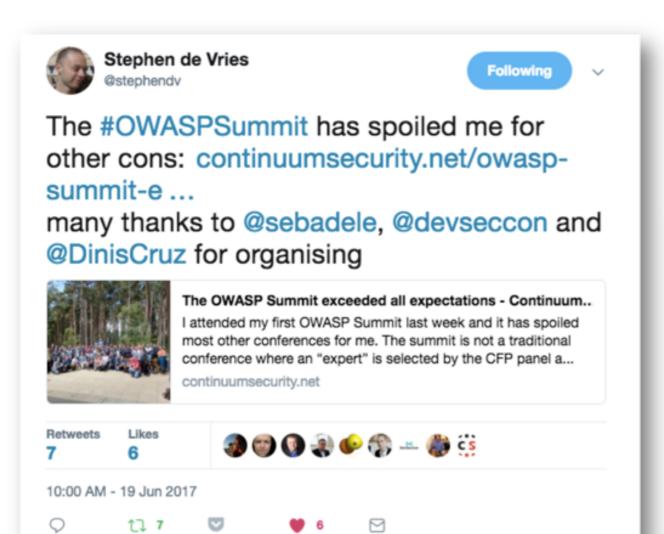


### OWASP Summit 2017 Debrief









### The OWASP Summit exceeded all expectations

By Stephen De Vries | 19 June 2017 | Conferences, SecDevOps

I attended my first OWASP Summit last week and it has spoiled most other conferences for me. The summit is not a traditional conference where an "expert" is selected by the CFP panel and has 40 minutes to expound The Truth from a podium, while everyone else takes notes. I'd call this a "top down" style of conference, and most in the security and appsec space follow this format.

What made the OWASP Summit unique was that it was a "bottom up" conference. A large number of topics were selected months ago, thrown up onto a github page where anyone interested could sign up as an organiser or participant (no speakers). Participants could then suggest an outcome for the session, push some initial content and get the conversation going. If no-one registered for a given topic, then it was removed. Initially, I thought this system was chaotic and would result in 20 strangers sitting in a room waiting for someone to lead. The exact opposite happened.

Everyone participating in a session had a real interest in being there and contributing or listening and the participants spanned the range from security consultants, to architects to CISOs. The result was engaging and informative discussion about key appsec topics where we could all challenge established ideas and dig deeper into the How and the Why of many practices.

Another key to the success was the calibre of the participants. I bumped into participants from Oracle, Microsoft, AXA, Adobe and Capital One. Participants who are actually implementing the practices contributed to the quality of the discussions during each session.

The premise was that each session should result in an outcome, something that can be published or used as a starting point for more material. While I don't think many of the sessions achieved that goal, the real value was in the mental work and discussions during the sessions. In short, I'll be attending every summit from now on and would love to see it becoming an annual event.

Many thanks to Sebastien Deleersnyder, Francois Raynaud and Dinis Cruz for organising the event as well as the many individual session organisers who made this event such a success. See you next year! RECENT POSTS

Search site

The OWASP Summit exceeded all expectations

OWASP Summit 2017

First International Workshop on Gender and Cybersecurity

Continuum Security at the Digital Enterprise Show 2017

Security workflows for DevOps teams with IriusRisk

### TAGS

Community Edition,

Devops Security, Events, Jira Risk,

News, Programming,

Threat Modeling.

### ARCHIVES

June 2017

May 2017

April 2017

February 2017

January 2017



12-16 JUNE 2017 WOBURN FOREST CENTER PARCS

Welcome to OWASP Sumit 2017!





### Let's start with a question







Full screen







0:01 / 1:01

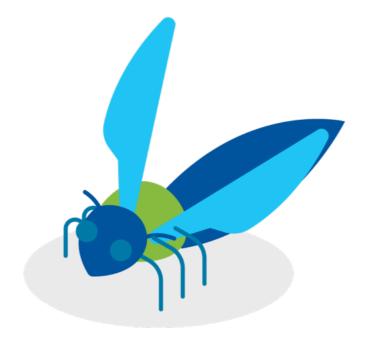






See video at <a href="https://youtu.be/RlyPSY0KS2k">https://youtu.be/RlyPSY0KS2k</a>





### We are the crazy ones



### Who think we can change the world



### And who will change the world

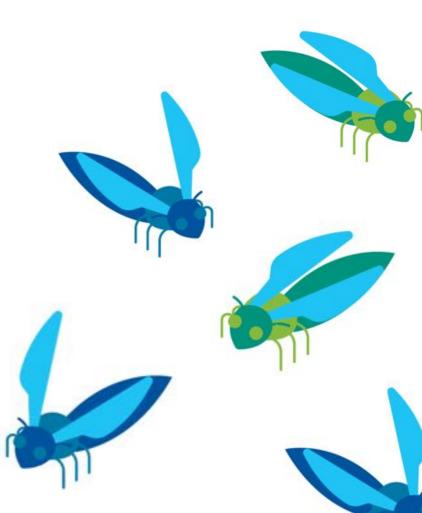


## This Summit is our opportunity to create something amazing

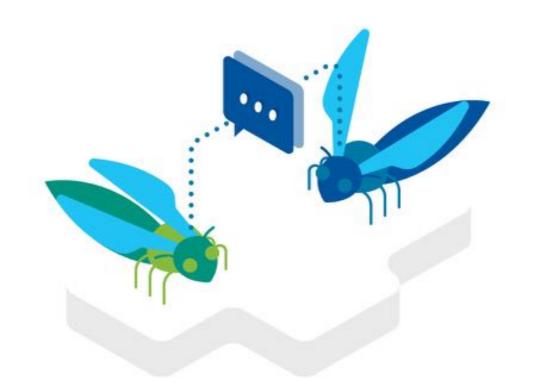




Look around this room







## Everybody is here to collaborate and share their knowledge

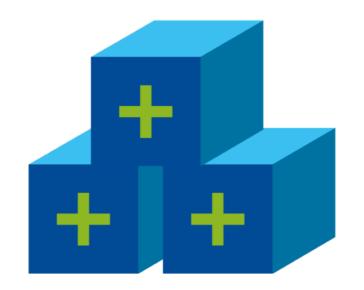


## This is unique and very special



# We have the opportunity to create amazing outcomes





## Use this opportunity to learn and to solve hard problems



## In the next 5 days our actions will create a lasting legacy



### But for that to become real



## We need to focus 100% on the outcomes of your Working Sessions





## Each Working Session has to create a tangible outcome



## That is how we will measure the success of this Summit



# We have an amazing Summit team that is focused in making you productive

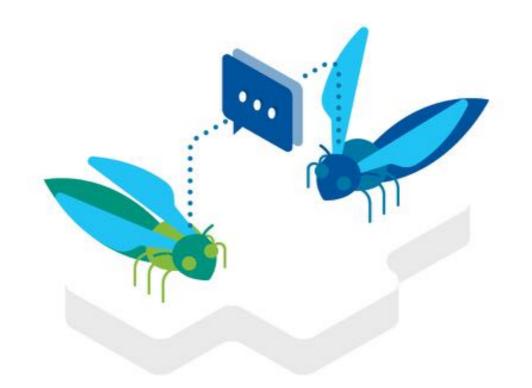


## Please help them as much as possible



## Thank you for being here and for believing in the Summit





### Now is the time to deliver



### Now it's your turn



### 12-16 JUNE 2017 WOBURN FOREST CENTER PARCS



### SPONSORED BY

OWASP Foundation OWASPSAMM project OWASP London Chapter OWASP Denver Chapter OWASP Belgium Chapter OWASP Netherlands Chapter OWASP German Chapter OWASP Luxembourg Chapter

















### Monday's Schedule

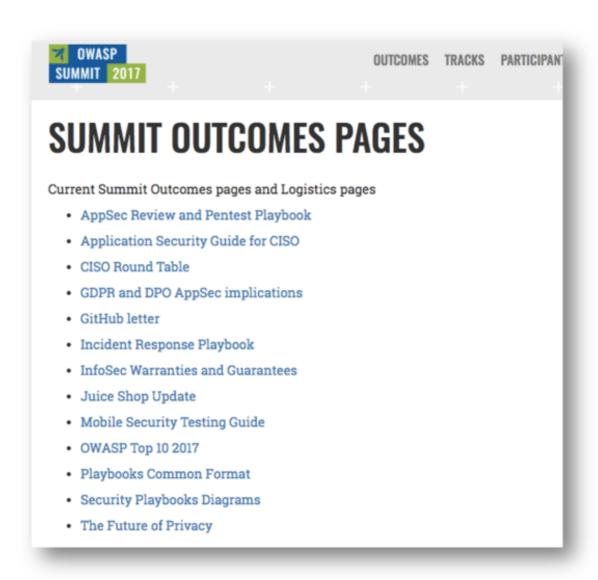


location	AM 1 10:30 to 12:30 (2h)	PM 1 1330 to 1500 (LSb)	PM 2 19:30 to 16:40 (th)	PM 3 1630 to 1730 (lb)
Kings Room-1		TLS for Local IoT DevSecOps	Security Guild vs Security Champions	OWASP Internet of Things Project Owasp Projects
Portland Room-2	Top 10 2017 - Process Discussion	Top 10 2017 - Call for Data and Weightings Discussion	Juice Shop Brainstorming	Mobilising Business Lines for Security
Larch Room-3	SAMM - Kick Off OwnspEAMM	SAMM - V2 Ground Rules	SAMM - Conducting Assessments	SAMM - Core Model Update 1 - Intro OwnerSAMM
Montague Room-4	MSTG Book Sprint - Mobile Operating Systems	MSTG Book Sprint - Mobile Operating Systems Mobile Security	MSTG Book Sprint - Mobile Operating Systems	MSTG Book Sprint - Mobile Operating Systems
Maulden Room-6		Playbooks Common Format Security Playbooks	Security Playbooks Diagrams Security Playbooks	Playbooks vs Handbooks Security Playbooks
Pedley Room-6		GDPR and DPO AppSec implications	Threat Modeling Tools Threat Model	Threat Modeling Diagramming Techniques Threat Model



### Outcomes online

DRAFT started at <a href="https://owaspsummit.org/Outcomes/">https://owaspsummit.org/Outcomes/</a>





### Full agenda



ere are the current	Tracks (with multiple Work	ing Sessions)			
AGILE APPSEC	CISO	DEVSECOPS	EDUCATION	JUICE SHOP	MOBILE SECURITY
OWASP	OWASP PROJECTS	OHASP TESTING GUIDE V5	OWASP TOP 10 2017	OWASPSAMM	RESEARCH
SECURITY CROWDSOURCING	SECURITY PLAYBOOKS	SUMMIT TEAM	THREAT MODEL		
OPICS					

173 working sessions in 6 meeting rooms and 10+ villas 208 participants (153 on-site & 55 remote)





### "small" selection of outcomes (in no particular order)



### Top 10 2017 – Process Discussion

### The history of the Top 10 was covered briefly:

- 2004, no data backing the standard
- 2007, CVE data only was used for analysis; we used our judgement to fit in CSRF as an issue
- 2010 and 2013, the forward-looking issue was out of date components, which on one analysis of the OWASP Top 10 to breach data represents a full 24% of all data breaches.
- Moving forward, it was agreed there should always be room for forward-looking inclusions.

### Key takeaways

- Our audience is everyone in AppSec, not just developers
- The basis for the OWASP Top 10 is "risks"
- We will document the rationale for the OWASP Top 10; for 2017, 2020, and 2023
- The Board will be asked to a change the Project Leader Handbook, where Flagship projects will have a six-month grace period to obtain at least two leaders from two different firms to avoid perceptions of vendor lock-in, either real or perceived.
- There will be a transparent and documented decision to ensure that up to 2 of the OWASP Top 10 issues will be forward-looking, and that the community should drive the consensus for what they will be.





### Top 10 2017 – Call for Data and Weightings Discussion

We want to drive a release, but RC2 will not come out this week, so we will work on collecting more data.

### **Key takeaways**

- Data collection process and timeline will be published on the wiki to ensure sure everyone knows how data is collected and analysed.
- Andrew van der Stock will work on a process with Foundation staff to ensure that we can maximise publicity for the next data call round in 2019.
- A data call extension will be pushed out for interested parties.
- Dave Wichers will reach out to Brian Glas for feedback for tomorrow morning's data weighting session.
- For 2020, we will try to find data scientists to help us to improve our data methodology and analysis.
- Ordering will never be strictly data order; to provide continuity, there is a decision (which will now be documented) that if A1 ... A3 in 2010 are the same in 2017 but in a slightly different order, those will retain a previous order.
- Feedback obtained from the OWASP Top 10 mail list will end up in Git Hub tomorrow as issues.





### work in progress

**OAuth2 Best Practice** 

for native apps

Cryptographic best practices, algorithms & key strength Recommends "The Code Book" – Simon Singh for a fun read

IOS Reverse Engineering

Android file integrity and data integrity

Debugging functions on Android Finalising JWT Test Case Intercepting Google Cloud Messages

Static & Dynamic Analysis Verifying Strict Mode





### OWASP MOBILE SECURITY TESTING GUIDE UPDATE



- The OWASP Mobile Security Testing Guide (MSTG) was updated at the OWASP Summit 2017.
- The MSTG is a comprehensive manual for mobile app security testing and reverse engineering.
- It describes technical processes for verifying the controls listed in the OWASP Mobile Application Verification Standard (MASVS).
- The current master branch can also be read on Gitbook, as well as leanpub.



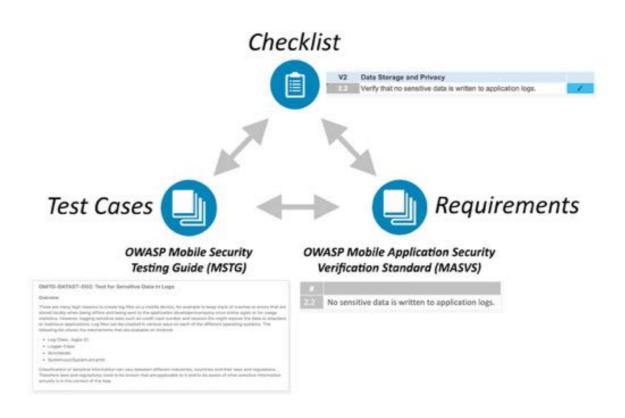


### Aim of the MST Guide

To produce a comprehensive testing guide to be used during a mobile app security test that enables testers to deliver consistent and complete results.

### To include:

- Processes
- Techniques
- Tools
- Exhaustive set of test cases







### Content created

### **Authentication**

- Creating best practices for OAUTH2
- JWT JSON web token authentication for mobile apps
- Having device binding in IOS
- Up to date biometric authentication for android

### Cryptography

- Reviewing general cryptography principles
- General & platform specific
- Issues around password storage

### **General Editing**

- Removing any duplications and surplus information
- Writing in easy-to-read English





## Define Agile Security Practices

Participants redefined the session goals to discuss security practices for agile development teams, rather than agile practices for security teams.

We noted the following point on the original scope:

- The security team should be a friend that provides help and resources to the dev teams, rather than source of work, blame, and stress.
- For more information, and there is a lot, please see the what we uploaded to GitHub





## Agile Practices for Security Teams

We discussed the key activities of an Agile Security Team and agreed on this list

- Education
- Communication
- Standardization and Compliance
- Support
- Governance and control
- Engineering
- Practices





## SAMM V2

- One Model
- Evolution
- Scope = software
- Experiment with tagging to cover various viewpoints
- Extra working sessions with DevSecOps maturity model
- Keep it simple! Balanced model (desirable)

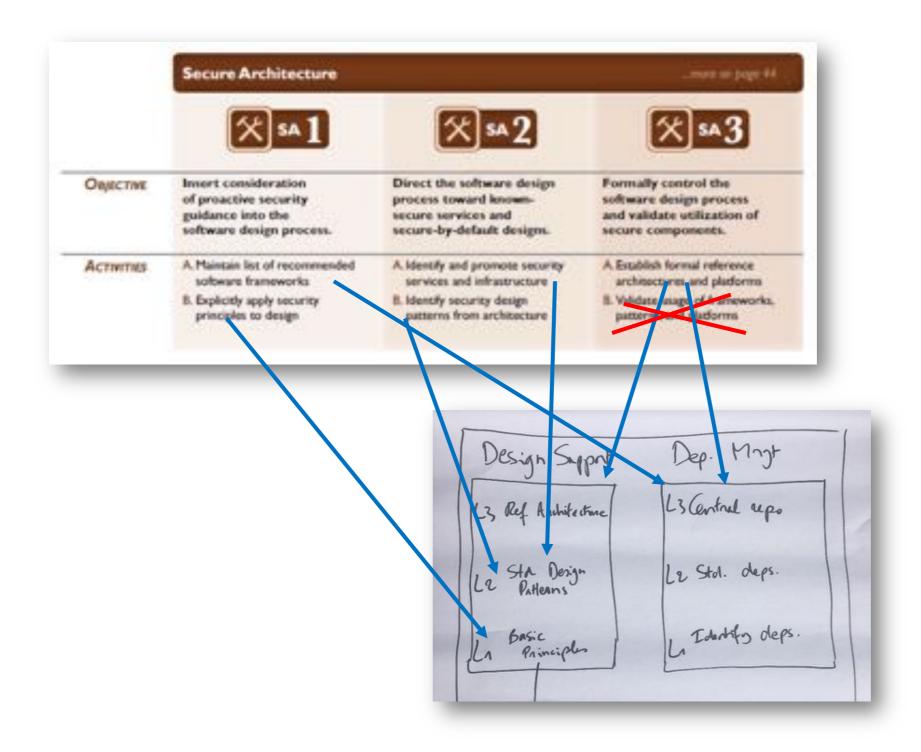
(when)	Monday	Tuesday	Wednesday	Thursday	Friday
AM-1	SAMM - Kick Off Room-3	SAMM - Introduction to Generic DevOps Security Maturity Model Villa-I	SAMM - Dataset Project Villa-I	SAMM - Core Metrics Wills-J	SAMM - Maturity Models tool Main-Room
PM-1	SAMM - V2 Ground Rules Room-3	SAMM - Core Model Update 2 - Dev Methods Villa-I	SAMM - Core Model Update 3 - Implementation Villa-J		SAMM - After Action Report Room-4
PM-2	SAMM - Conducting Assessments Room-3	SAMM - OWASP Project alignment Villa-I	SAMM - Outreach and Marketing Villa-I		
PM-3	SAMM - Core Model Update 1 - Intro Room-3	SAMM - Stories and Templates Villa-I	SAMM - Standards and Compliance Mapping Villa-I		
Eve		SAMM - Mapping DevOps Maturity Model Villa-I	SAMM - core model placeholder Villa-I		

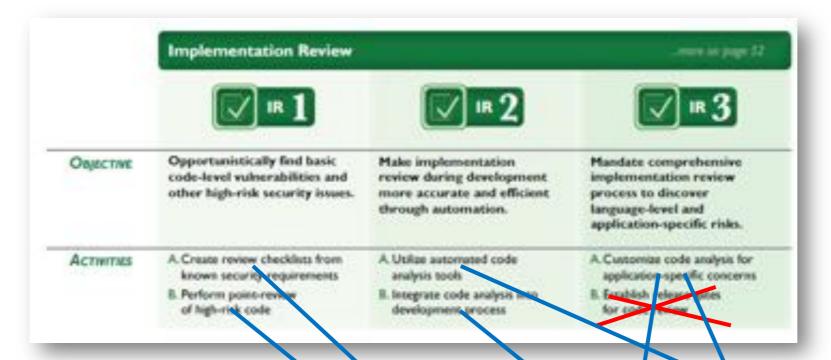


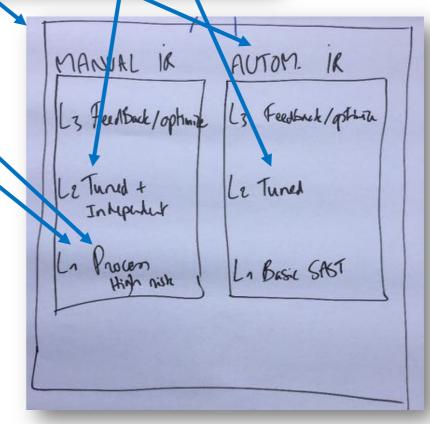
## SAMM Sessions – Core Model Update - Developer Methodology

- Restructure SAMM activities with an increasing maturity of implementation
- Apply this restructure exercise to all SAMM practises and activities (high level).
- Create one or more detailed descriptions with implementation guidance.





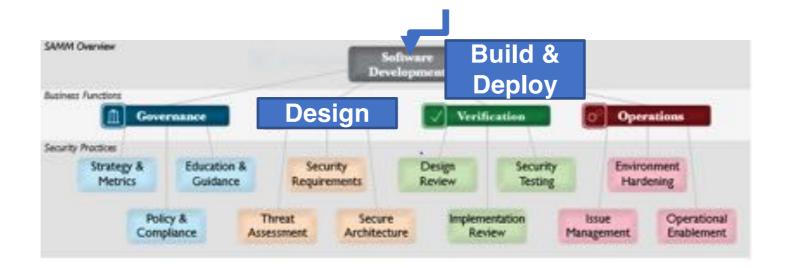






# SAMM Sessions – Core Model Implementation

- Explore adding a <u>fifth business function</u> to the SAMM Model
  - Missing activities for secure build
  - Operations does not cater for deployment
  - Issue management is not covering defect management







# SAMM Sessions – Defect management

#### **Defect Tracking**

L3: Full integration with risk management + feedback loop to other activities

L2: Integrate with existing defect tracking system + SLA

**L1: Triage Defects** 

Confirm, severity, priority, assignments

#### **Vulnerability Tracking**

L3: Integrate with SOC + self-protection

L2: Disclosure process + integration with tracking system + SLA

L1: Vulnerability tracking + response plan





## Recruiting AppSec Talent

- We discussed the gap between companies' needs to recruit talented AppSec people, and attracting the best AppSec people to come work at their company.
- The Joel Test is a quick indicator of Development culture: an irresponsible, sloppy test to rate the quality of a software team.
- We have adapted the Joel Test to quickly indicate a company's AppSec culture.
- The test's purpose is to help companies attract the right talent and help talent to find the right company

#### First draft of the AppSec Joel Test (in no specific order):

- 1. Does the company fund ongoing education for AppSec hires?
- 2. Do developers undergo periodic AppSec training?
- 3. Do AppSec people have quiet working environment?
- 4. Are there both offense and defense teams, and do they work together?
- 5. Can the AppSec team delay release (or fix) a new version or product?
- 6. Is the AppSec team involved throughout the development lifecycle process?
- 7. Can I access developers directly?
- 8. Are security bugs treated like functional bugs?
- 9. Is there some form of SDL / Maturity model / or other process in place?
- 10. Can AppSec people choose their own tools (paid for by the company)?
- 11. Is there a dedicated Incident Response team?
- 12. Does the company contribute to Open Source and community efforts (or support personal contributions)?





# Creating AppSec Talent (next 100K Professionals)

Goal: Bridge the hiring gap in AppSec focusing on

Bringing in new entrants, and those in the mid-career phase

#### **Main Outcomes**

- Education as a Path
- Educate Managers & Directors (Board Level)
- Develop the Security Culture
  - Make reciprocal agreements with other professional bodies (piggy back joint ventures)
  - Use industrial regulator or other standards
  - Market these resources aggressively

- Diversify Language
  - Git Plugin for Internationalisation
- Design Targeted Accessible Resource Sheets (Reference "A Quick Developers Guide for OWASP Projects" Infographic
  - How to get Management on Board?
  - AppSec for Developers
  - Resource Menu for Educator's (Primary -> Tertiary)
  - How to transition from other careers





# Application Security BSc/Masters Curriculum Design

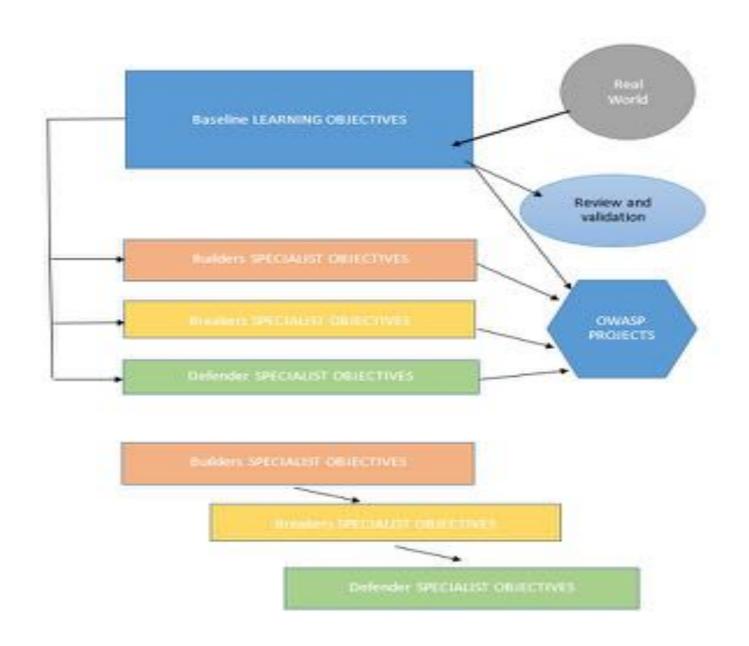
#### **Outcomes**

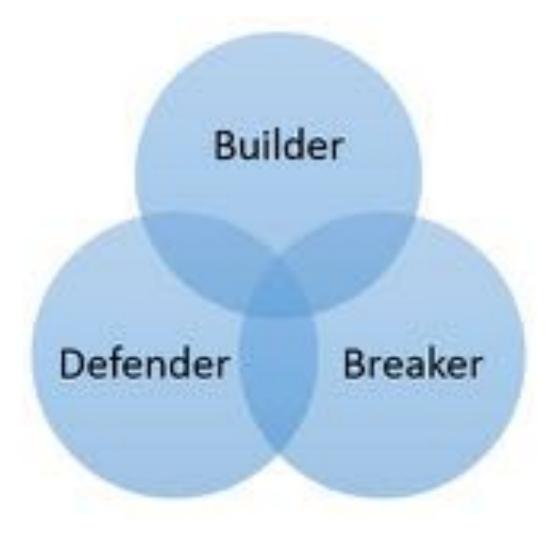
- A wider Strategy than BSC/MSC, that Combines OWASP strategic strengths
- Agreement that there is not enough APPSEC, in educational curriculums
- Prioritise/Rank learning objectives.
- Creation of an Educational Diagram
- Completion of an exit survey





# Application Security BSc/Masters Curriculum Design (Diagrams)









## Application Security Guide for CISO 1/3

Outcome 1 (unranked) – What topics would you like covered in the new CISO guide?

- Incorporate reference to outcomes of 2017
   Summit CISO track
- Expand to include new tools/technologies
- Expand to include compliance with GDPR
- Expand on new emerging technology risks
   and provide risk Mitigation Guidance (e.g.
   APIs, proliferation, and Microservices/interoperability, Biometrics, Cloud (internal and external), strategies for managing risk in Cloud environments)
- Expand on Risk Management Strategies For Vendors, Provisioning, Supply-Chain Risks

- Expand on new evolving threats facing web Applications (e.g. 0-day exploits
- Add reference to handbooks and playbooks for CISO's managed process
- Where to provide guidance or where to put a focus, e.g., 5,000 applications in different countries, where to allocate security resources in such a situation
- How to get visibility across the organisation – who is doing what. As CISO you need to know what changes are being made, and where





## Application Security Guide for CISO 2/3

Outcome 1 (unranked) – What topics would you like covered in the new CISO guide?

- Corporate culture: how can a CISO be an agent of change and overcome cultural challenges? Knowing the corporate culture to enable CISO to function properly; trust is crucial to success
- Success stories as examples of how to win –
  people can refer to these as a value-add how
  can the CISO provide value to the business
- Knowing the right questions to ask triggers the appropriate response and action
- A proactive, strategic CISO is better than a reactive one: knowing to shift focus from fighting fires to ensuring the fires do not get out of control

- After an incident, think about how to promote change; train people to think holistically not just about the incident, but about the impact of the incident
- Involvement CISO should be involved in road mapping for future deployment and included in business development meeting so CISO can plan ahead
- Format: It was agreed that a handbook would have more value than a playbook given threat variables between company requirements





## Application Security Guide for CISO 3/3

Outcome 2 (unranked) – What type of question would you like included in the new CISO guide?

- Which among the organization IT assets, networks or applications are considered more at risk of cyber-attacks?
- Does your organization have a cyber-threat intelligence program and attack monitoring/alert process?
- Does your organization has adopted S-SDLC? If yes which one. Does it include threat modeling?
- Is application security seen as an investment or as a cost by your organization?
- Does your planning of application security follow a long term strategy (at least two years) ?
- Need to ask questions about how to map the scope, application, and business process perspectives
- How to manage risk from third parties, private vs. public premise
- How do you manage the risk for developing technologies, such as the Cloud?





## Securing GitHub Integration

#### **Roles**

- Users (repo owners): want to allow access only to what's necessary, not full access
- Integrators (Oauth apps): only want to ask for access to necessary resources, not full access
- Administrators: want a rich audit trail

#### What's needed

- A more granular access control:
  - Be able to select what repositories can be accessed (currently it's all or nothing)
  - Allow read-only access to a repo (currently it's read/write or nothing)
  - Setup `commit status webhook` without asking for `write` access to the repo
- Better Audit trail:
  - Organization wide audit trail (Github Online)
  - Better visibility into the activity of users (Github Enterprise)

#### **Outcome**

 We drafted a letter so we can reach out to GitHub with a request for comment, and to start a dialogue





## Threat Modelling sessions

- Series of Hands on Threat Modelling Juice Shop:
  - Architecture, Deployment & Operation, New features, Purchase workflow
  - Attacking & Fixing
- Threat Modeling OWASP Pages revamp
- Threat Modeling Templates
- Threat Modeling IoT Devices
- Threat Modeling Diagramming Techniques
- New slogan: The Sooner The Better, Never Too Late!





# Threat Modelling Cheat Sheet & Lightweight Threat Modelling

- The process has three activities
  - Ascertain
  - Threats
  - Mitigations
- Ascertain Define the underlying structure using Agile User Stories.
- Threats Apply OWASP Threat Templates to the structure.
- Mitigations Apply OWASP Countermeasures to relevant threats.



## WebGoat - 1/2

- Add lessons not found in other Goat like applications e.g. SSRF
- Discussion about sharing content between Goat like applications such as WebGoat, NodeGoat, etc.
- Flexibility when presenting in lessons
- Language support discussion and agreed on supporting one language and focus on other features first
- How to integrate automated vulnerability checking into WebGoat
- Fixing a lesson should be added so developers can fix as well as break



## WebGoat - 2/2

#### **New lesson ideas**

- Upload functionality
- Path traversal with shell upload
- Crypto
- Focus on HTML5
- JSON Injection
- Business logic
  - For example, after payment of an order repeat the request and keep ordering the TVs without paying.



## **OWASP Playbooks Series**

- actionable, consistent process for getting started with various application security scenarios
- Templates creates
- First series started
  - AppSec Review and Pentest Playbook
  - Bug Bounty Playbook
  - Playbooks Common Format
  - Incident Response Playbook
  - DoS Playbook
  - Security Playbooks Diagrams
  - Media Handling Playbook
  - Due Diligence Playbook
  - Ransomware Playbook
  - Playbooks vs Handbooks
  - Security Monitoring Playbooks





## AppSec Review and Pentest Playbook Outcomes

- Eleven participants collaborated on what defines an Application Security Pen Test:
- Created outline for a AppSecPen Test Playbook
  - ✓ Initial draft of outline sent to participants for consensus

- Driven by specific concerns
- Driven by humans
- Driven by depth
- Driven by functionality





Goals & Preparation

Questions that will be asked

Response to Incident

Post Mortem Lessons learnt/next steps

#### Goals

- IR from a developer's perspective
- Don't cover entire IR field, just developer's roles and responsibilities
- Reinforce how other best practices, such as threat models, support the IR process.

#### **Preparation**

- Conduct fire drill consider tabletop exercises
- Assign points of contact (e.g. Security Champions)
- Rapid deployment plan
- Logging



Goals & Preparation

Questions that will be asked

Response to Incident

Post Mortem Lessons learnt/next steps

- Is it our data?
- Is it a breach?
- What app/service provides the data?
- Where did data come from?
- Can the data be time stamped?
- What does it mean?
- Does it have value?
- Can we roll back to last known 'good' state?



Goals & Preparation

Questions that will be asked

Response to Incident

Post Mortem Lessons learnt/next steps

- Rapid deployment, owners have to know their roles
- Communication keep people updated with minimal publicity
- Log what happens, and when, so people coming in as the crisis develops can be brought up to speed quickly
- Stagger engineering team so that 24/7 coverage is possible (people need to rest, eat, etc.)
- The benefit of a situation dealt with quickly and efficiently outweigh the cost of the remedy and the cost to the business



Goals & Preparation

Questions that will be asked

Response to Incident

Post Mortem Lessons learnt/next steps

- Did the threat model cover this?
- Bug Bounty the target?
- Why it happened?
- How did we react?
- Was best practice followed?
- If not, why not?
- Tuning web application firewalls



Goals & Preparation

Questions that will be asked

Response to Incident

Post Mortem Lessons learnt/next steps

- How many pre-requisites were satisfied
- Was Playbook appropriate?
- Variables will cause gaps in PB
- What adjustments need to be made

 We feel that a Preparation Guide could satisfy needs in this area, perhaps building on Tom Brennan's OWASP Incident Response Project



## **OWASP Testing Guide v5**

#### Tasks completed

- Brainstorming regarding the new activities to perform to improve the guide
- Alignment with OWASP guides:
   Development Guide, Code Review Guide,
   ASVS, Top10, Testing Checklist, ZAP,
   Vulnerability list
- Discussion on tools
- Add the list of new tests to the v5

#### **Outcomes**

#### **New Tests to Write**

- Server-Side Request Forgery (SSRF)
- Server-side Remote Code Execution (RCE)
- XML External Entity Attacks (XXE)
- Self Based DOM XSS
- Authorization bypass horizontal
- Authorization bypass vertical
- Server-Side Template Injection (SSTI)
- Host Header Attack
- SPARQL Injection
- Testing for Deserialization of untrusted data
- API Abuse
- Testing Content Security Policy V2 (CSP)?
- Testing for SSO?



## **OWASP Testing Guide v5**

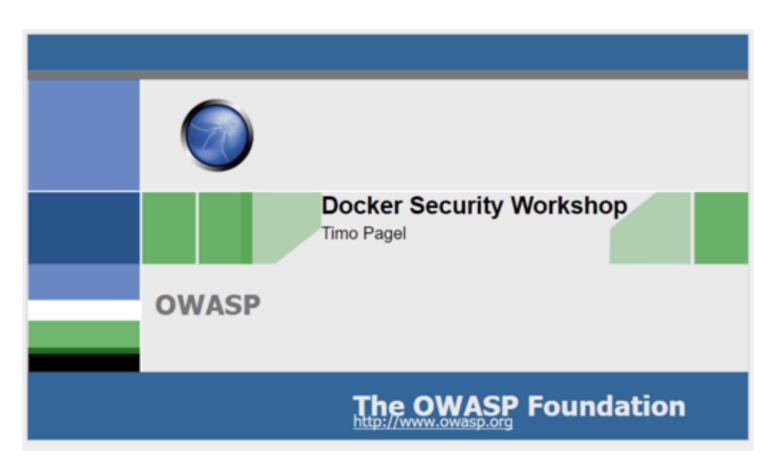
#### **Review**

- Client Side Testing
- ORM Injection
- Authorization Testing
- Information and Config management testing
- Authentication Testing: add oauth testing
- Reporting: adding how to create security testing case for devs
- https://www.owasp.org/index.ph p/Test\_Local\_Storage\_(OTG-CLIENT-012) add Client Side SQLi





### **Review of Docker Security Workshop**



https://github.com/wurstbrot/docker-security-workshop

#### **Outcome**

- Audience: Users of Docker
- Modification/Simplifying of slides
- Remove complicated slides
- Correction of (some) translation issues
- Enhancement of documentation
- Outlook:
- Example for Clair to scan local images



### **OWASP-CDC**

- Owasp Collective Defence Cluster
- Triggered for the first time 8-June!!!!
  - Slack Channel Created
  - Connections made help to clarify situation
- Already a success story
- If you happen to need it, please don't hesitate to trigger it (even before formal agreement)



**OWASP Collective Defence Cluster** 

#### Press Release

On day x, company X was hit by a cyber security incident which severely affected the security of its web platform.

After identifying the scope of the incident, company x realised it lacked the internal resources, defence mechanisms, and expertise to handle the security workload, and this would affect the speed of its response to a sophisticated, malicious attack.

Company X triggered the OWASP Collective Defence Cluster (CDC), which allowed it to access the resources shared by the participating companies.

The on-call Security Champions and SoC (Security Operations Centre) members activated the Collective Incident Response PlayBook, which described the activities and sequence of events of the incident.



## Numerous project reboots / started

- Owasp Orizon Reboot (SAST tool for Owasp)
- Threat Modeling
- OWASP CDC

•



#### **OWASP Summit 2018**



### Join us again next year!!!!

Summit dates **23-27 of April 2018** 

Same venue, same team, more focus, better preparation

https://owaspsummit.org/

<u>@OWASPSummit</u>