Shifting Left: Integrating Security Testing into Development Operations of a Research Project

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Traditional Software Engineering
The Wall of Confusion in Project Teams

Graphic: https://www.rightbrainnetworks.com/2016/01/08/5-promising-developer-tips-success-devops-world/
DevOps stands for Development & Operations - A business drive to improve communication and collaboration among development and operations teams, in order to increase the speed and quality of software deployment.

-> A new culture/mindset + practices + tools

Continuous Integration
Continuous Delivery
Continuous Deployment
Communication & Collaboration
Monitoring & Logging
Configuration Management
Change Management
Agile Project Management
Test Automation
Continuous Testing
Continuous Feedback
Infrastructure As Code
Microservices
Shift-left
DevOps Best Practices
Typical Workflow with Automation

- Teams focus on business requirements and high-quality code
- Multiple deployments per day if needed: faster-to-market/pilot sites
- Significantly lower change failure rate
Embracing DevOps principles is above all a change in *Organizational Culture.*
But where are the Security Tests?
DevSecOps automates the integration of security at every phase of the software development lifecycle, from initial design through integration, testing, deployment, and software delivery!

**Static Application Security Testing**
- Directly on Code
- Language Specific
- Does not Require Deployment

**Dynamic Application Security Testing**
- Requires Deployment
- Runs Directly Against the Application
- Simulates Malicious Parties' Behaviour
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Thank you!

Find more:

- **IoTAC project**: [https://iotac.eu/](https://iotac.eu/)
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