

Security Conference

DevSecOps in Telco: Full Lifecycle Management of Security Tools for Better R&D

Presented by: Luca Bongiorni



Security in DNA, Trust through Transparency

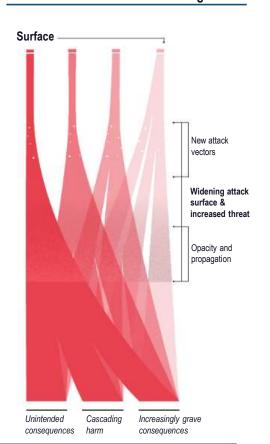
17 October 2023



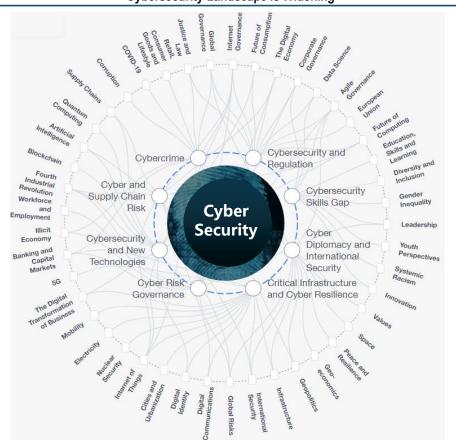
Cybersecurity is a Growing Concern



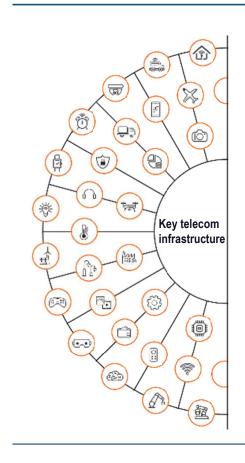
Threat Surface is increasing



Cybersecurity Landscape is Widening



Telecom Infrastructure is Crucial

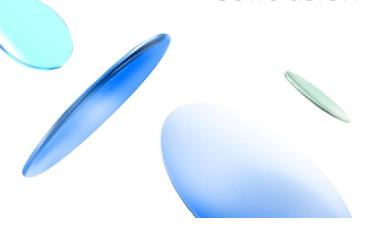




Vision and Mission of ZTE Cybersecurity

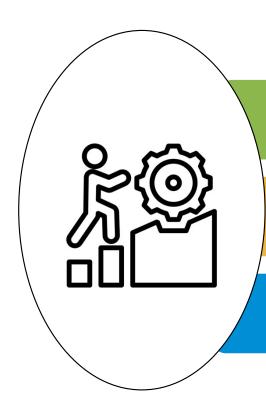
		Vision	Vision Security in DNA, Trust through Transparency					
		Mission	To build a world class cybersecurity governance system and provide our customers with end-to-end security assurance					
		Objective	To provide trustworthy and end-to-end cybersecurity assurance capabilities throughout an entire product lifecycle					
		Strategy	Cybersecurity is the highest priority for ZTE's product R&D and service delivery					
			Standardization, strict implementation, traceability, strong supervision, full transparency, and trustworthiness					

- DevSecOps in ZTE
- Security Tools Lifecycle Management & Reliable Use
- Telco's Case Study
- Conclusion





Status Quo of DevSecOps in Telco



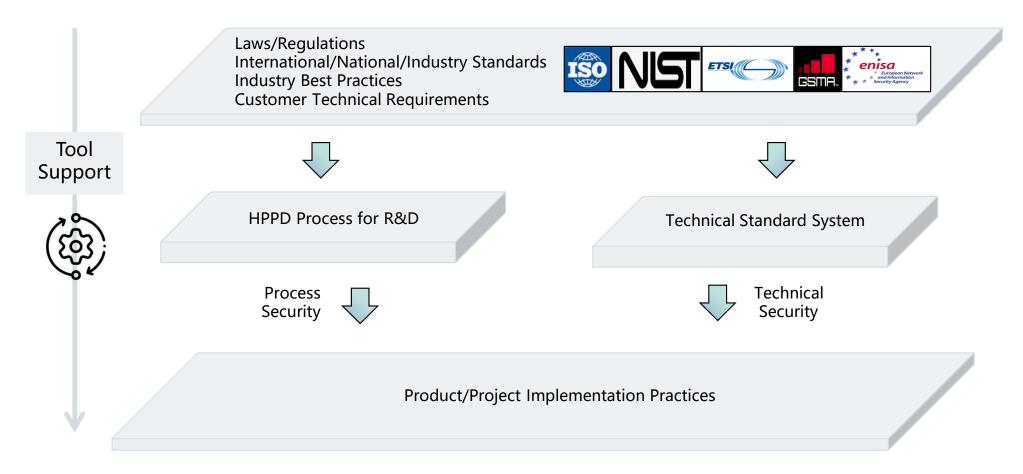
Transitioning from DevOps to DevSecOps brings changes.

ICT complex product categories requires customized pipelines to faciliate automation.

Vulnerability scanning tools only find known Issues. Not all business needs can be covered by current commercial tools.



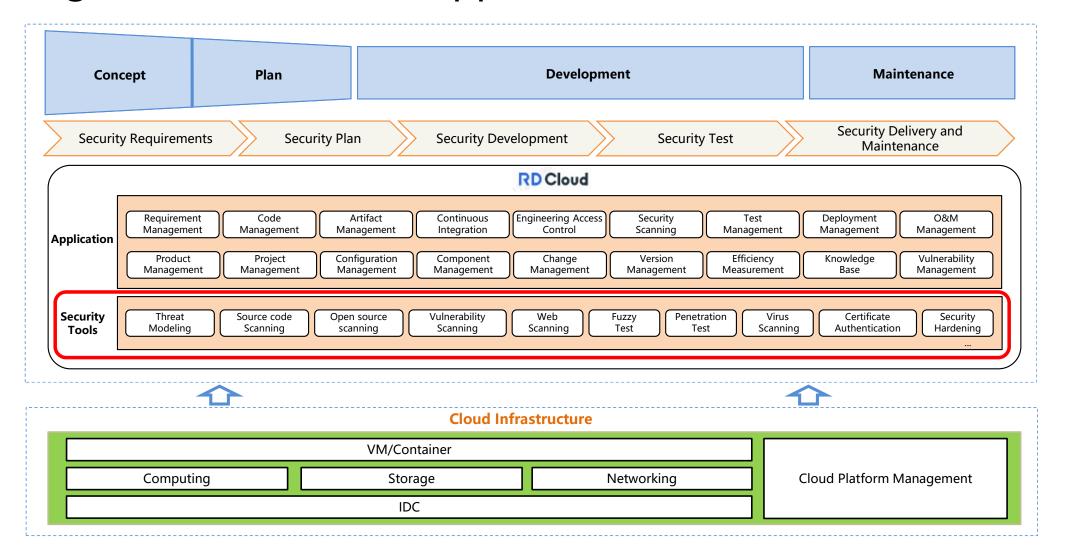
From Up to Bottom, Process Security & Technical Security



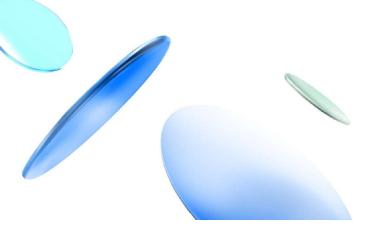
*HPPD - High Performance Porduct Development: ZTE's product development lifecycle processes



Digital Infrastructure Supports the Entire R&D Process



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Full Lifecycle Covered, Reliable Use

> Security Requirements

Security Plan

Security Development

Security Test

Security Delivery and Maintenance

Security Tool Library

Threat Modeling Source code Scanning Open Source Scanning Vulnerability Scanning

Web Scanning Fuzzy Test Penetration Test Virus Scanning Certificate Authentication

Security Hardening



Product Development Security Specification

*Execute:

Any code must be checked by 2 automated tools



Security Tool Management Specification

* Specification:

- Latest tool versions
- Latest tool rules
- Full scanning



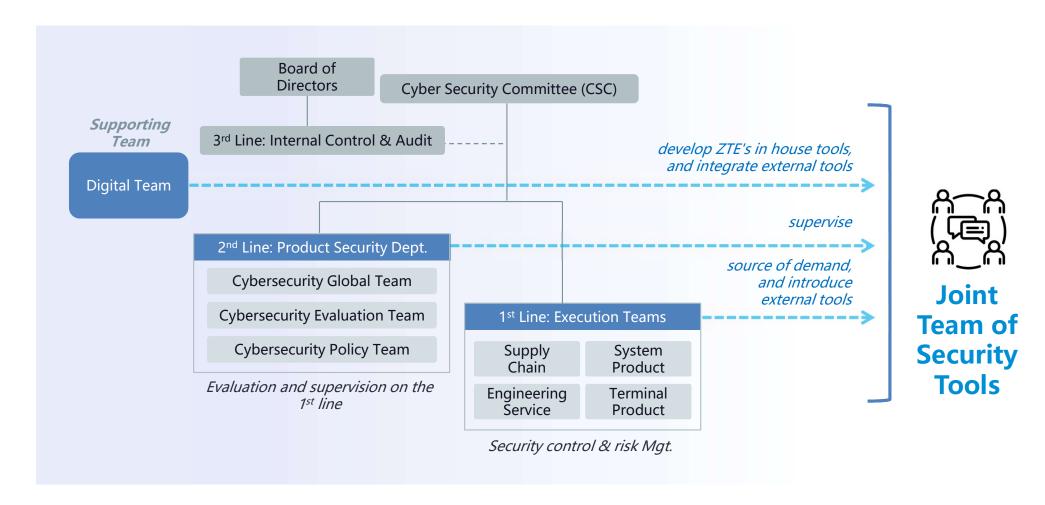
Independent Security Assessment Management Standard

*Supervise:

Internal independently spot check the implementation of security tools

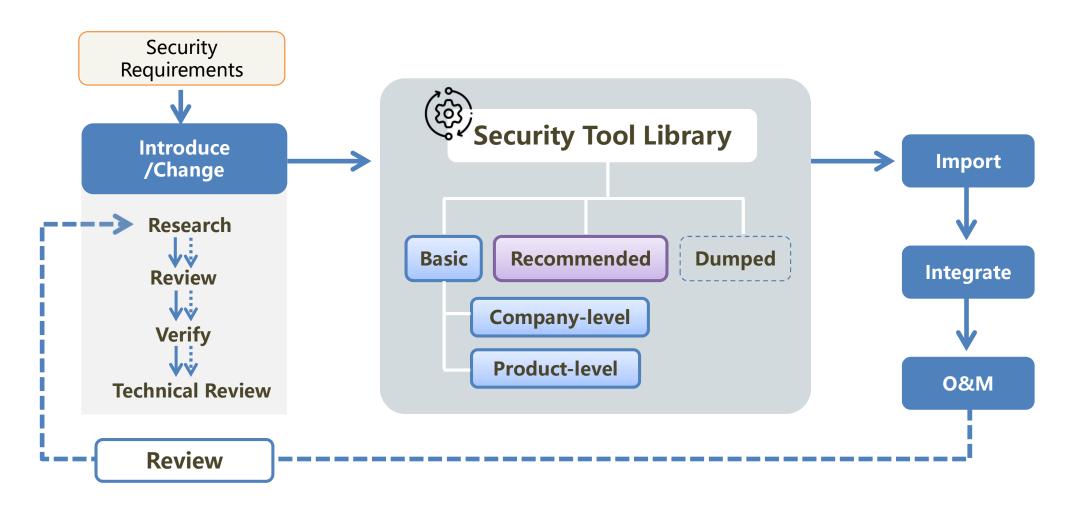


Joint Team for Security Tool Management

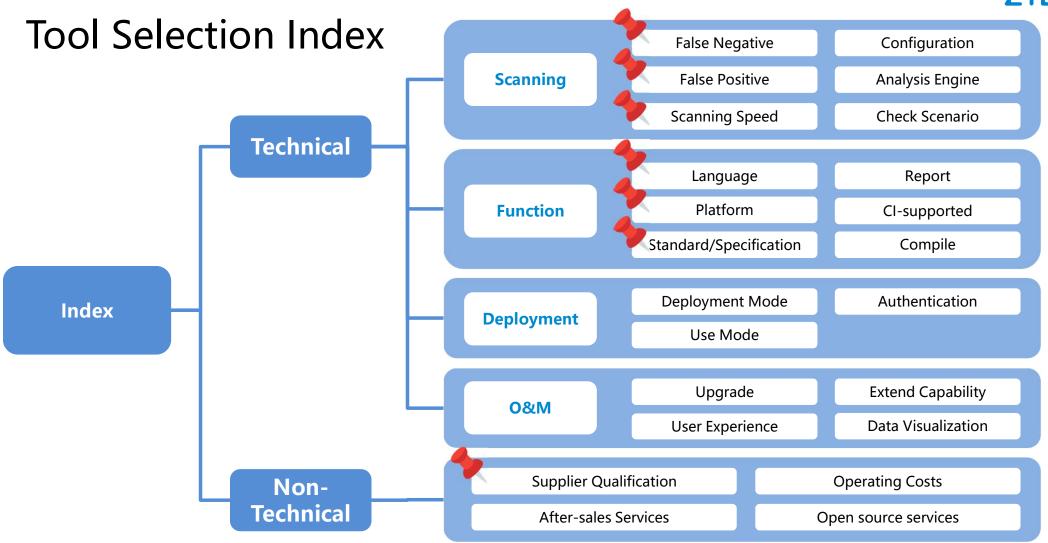




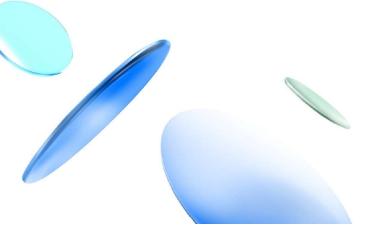
Lifecycle of Security Tool Management





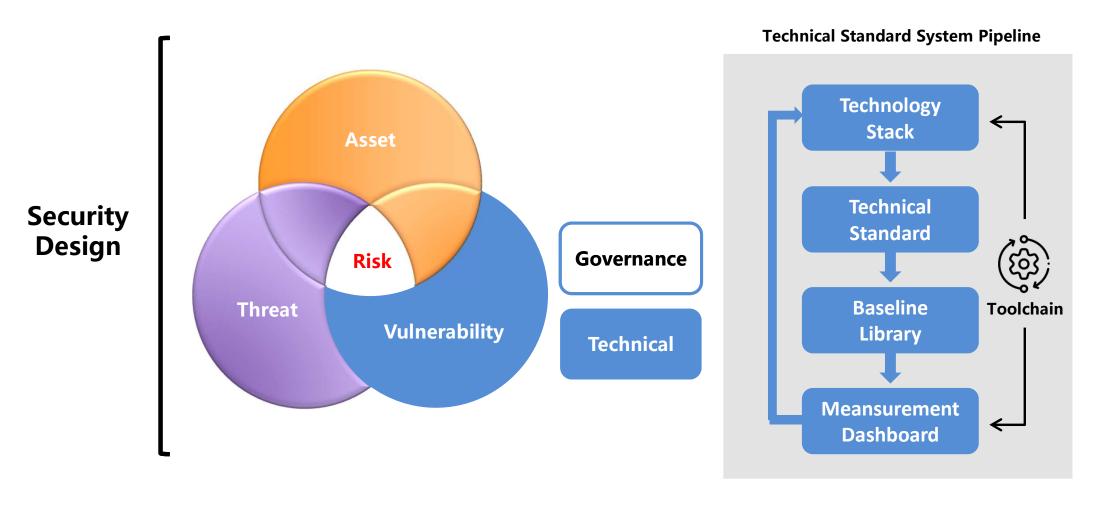


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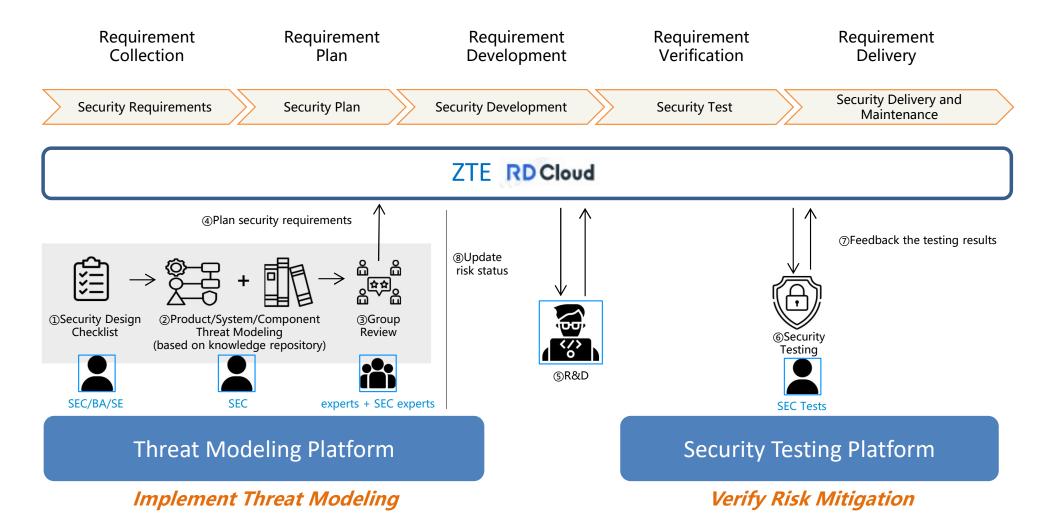


Telco's Case 1: Technical Standard System Toolchain



Telco's Case 2: Threat Modeling Implementation & Verification





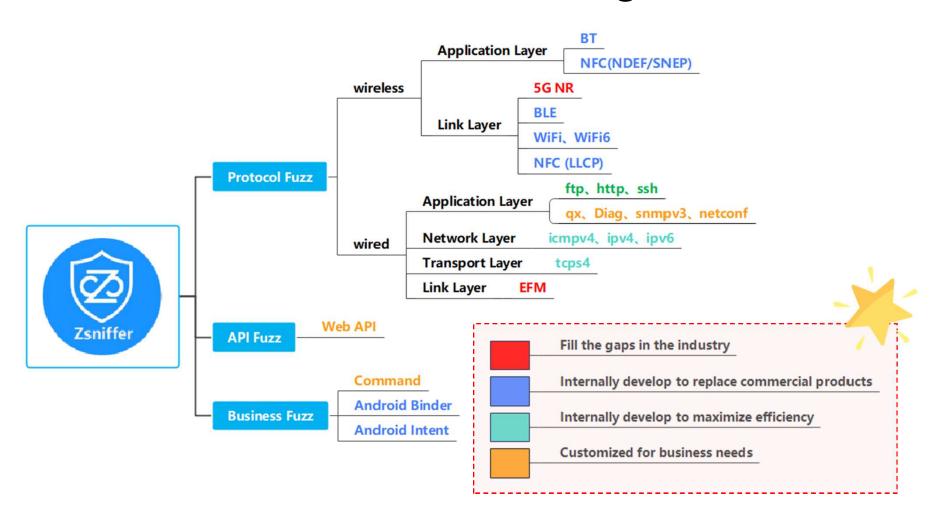
Telco's Case 3: Customized CI Pipeline

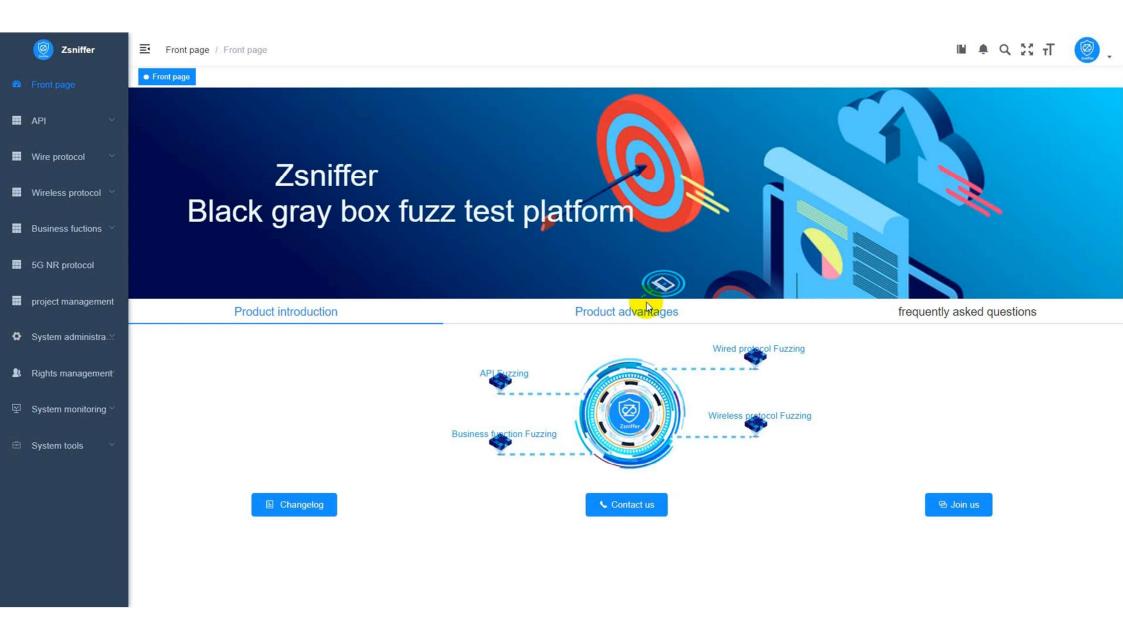
Target	Scope of Protection	Verify CI	Gate CI	Merge Cl	Version CI	
	Code Submission	\checkmark				
	Code Programming	\checkmark				
	Code Compile	\checkmark	\checkmark	\checkmark	\checkmark	
	Code Statcic Scanning	\checkmark	\checkmark		\checkmark	
Module /Component	Code Dulplication	\checkmark				
, component	Cyclomatic Complexity	\checkmark		\checkmark		
	Incremental UT/FT Coverage	\checkmark				
	UT/FT/CT Pass Rate	\checkmark	\checkmark	√	\checkmark	
	ST Pass Rate		\checkmark	√	\checkmark	
	System Scanning				\checkmark	
Version	Virus Scanning				\checkmark	
version	Autoregression				\checkmark	
	Open Source Scanning				\checkmark	
Product	Joint Products Autoregression √					

*Note: The scope of protection items can be customized chosen according to requirements.

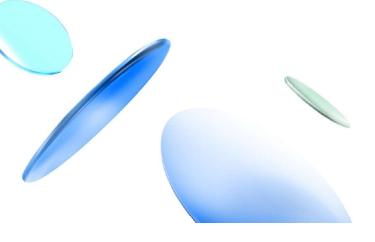


Telco's Case 4: ZTE's in-house Fuzzing Tool





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Using Tools for Efficient and Secure R&D



Efficiency Improvement



Secure by Design Secure by Default

Security in DNA, Trust through Transparency





