



TBD KAMU-BİB

Public Informatics Platform-19

October 26th-29th 2017



Digital Turkey and Cyber World: National Goals on Cyber Security

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CYBER WORLD ON 2017



DATA BREACHES	2014 ⁽¹⁾	2015 ⁽²⁾	2016 ⁽³⁾
TOTAL BREACHES	312	318	1,209
AVERAGE IDENTITIES EXPOSED PER BREACH	805	466	927
TOTAL IDENTITIES EXPOSED	348,000,000	428,000,000	1,100,000,000
BREACHES WITH 10 MILLION+ IDENTITIES EXPOSED	4	9	15

In the last **8 years** more than **7.1 BILLION** identities exposed + 3 Billion  + 0,14 Billion  +



RANSOMWARE	2014	2015	2016
NUMBER OF DETECTIONS	0	340,665	463,841
RANSOMWARE FAMILIES	30	30	101
AVERAGE RANSOM AMOUNT (USD Dollar)	373	294	1,077



PHISHING RATE by INDUSTRY	2017 (October)	2016	
Agriculture, Forestry & Fishing	1 for each 1751 e-mails	1 for each 1815 e-mails	1 st
Public Administration	1 for each 2147 e-mails	1 for each 2329 e-mails	2nd
Mining	1 for each 2276 e-mails	1 for each 2254 e-mails	3 rd
Finance, Insurance & Real Estate	1 for each 2420 e-mails	1 for each 1918 e-mails	4 th
Services Sector	1 for each 3191 e-mails	1 for each 3091 e-mails	5 th

(1) April 2016 Symantec Corp. Internet Security Threat Report, Vol: 21

(2) 27 April 2017 Symantec Corp. Internet Security Threat Report, Vol: 22

(3) 2017 September Symantec Monthly Attack Report, https://www.symantec.com/security_response/publications/monthlythreatreport.jsp



CYBER WORLD ON 2017

Attack Groups	Aliases	Country	Start Year	Motivation	Target Categories & Regions
Sandworm	Quedagh, BE2 APT	Russia	2014	Espionage, Sabotage	Governments, International Organizations, Europe, US, Energy
Fritillary	Cozy Bear, APT29, Office Monkeys	Russia	2010	Espionage, subversion	Governments, Think Tanks, Media, Europe, US
Swallowtail	Fancy Bear, APT28, Sednit	Russia	2007	Espionage, subversion	Governments, Europe, US
Cadelle	/None/	Iran	2012	Espionage	Airlines, telecommunications, Iranian Citizens, Governments, NGO's
Appleworm	Lazarus	North Korea	2012	Espionage, Sabotage, subversion	Financial, Military, Governments, Entertainment, Electronics
Housefly	Equation	US	2001	Espionage	Targets of interest to nation-state attackers
Strider	Remsec	Western	2011	Espionage	Embassies, airlines, Russia, China, Sweden, Belgium
Suckfly	/None/	China	2014	Espionage	e-Commerce, Governments, Technology, healthcare, Financial, shipping
Buckeye	APT3, UPS, Gothic Panda	China	2009	Espionage	Military, defense industry, Media, Education, US, UK, Hong Kong
Tick	/None/	China	2006	Espionage	Technology, broadcasting, Japan, aquatic engineering

Notable Targeted Attack Groups that have been publicly connected to nation states

© 2017 Symantec Corp. Internet Security Thread Report, Vol: 22



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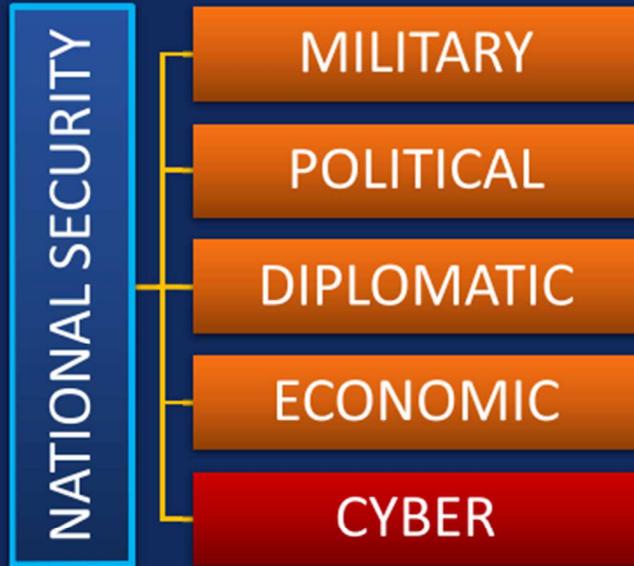
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National Goals on Cyber Security

Cyber Security & National Security

National Security: Identification of **threats** and **opportunities** by monitoring the **regional** and **global** environment in order to take measures against the threats to the national state and **security**, and the **processes** to determine the politics appropriate to these issues and to implement the most appropriate policies (National Security Committee)*



NATO Summit in Warsaw, 2016

- 2016: Cyber attacks to NATO ICT System
500 Attacks/month (60% increase w.r.t. 2015)
- National Cyber Security Budgets
France (2014): **1 Billion €** UK (2016): **2.5 Billion €**
- 2030 Cyber UnSecurity Volume: **90 Trillion \$**
(Denver University Research Report)

* <http://www.mgk.gov.tr/index.php/milli-guvenlik-kurulu/genel-bilgi>

** <http://www.nato.int/docu/review/2017/Also-in-2017/nato-priority-spending-success-cyber-defence/EN/index.htm>



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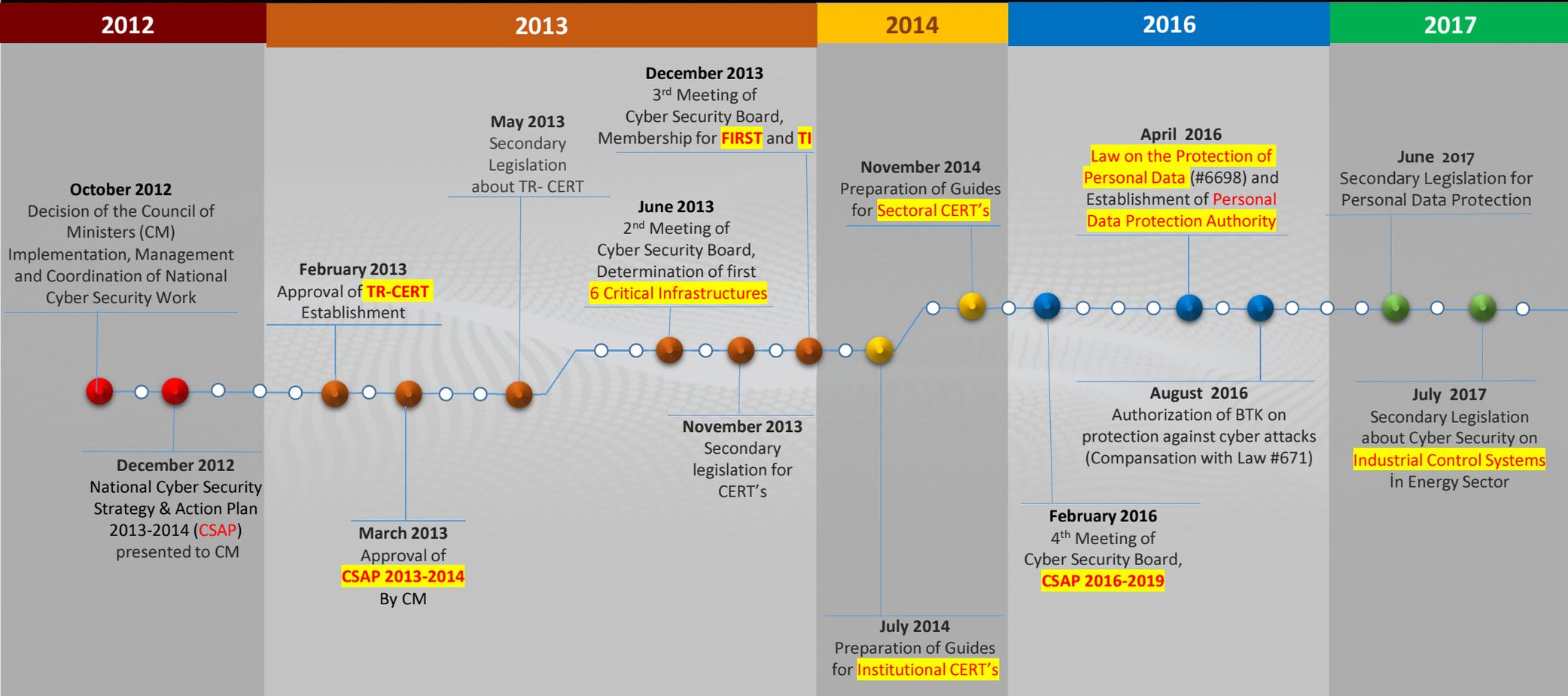
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Short History of Cyber Security in Turkey



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Cyber Security Governance Model of Turkey



National
Cyber Security Board



Institutional
CERT
(658)*

Sectoral
CERT
(8)*

Regulatory
Supervisory
Authority

Ministry

RSI

Institutional
CERT

Private Sector's
Sectoral CERT

ICTA - ICT Authority

BRSA - Banking
Regulation &
Supervision Agency

CMB - Capital Markets
Board

EMR - Energy Market
Regulatory



Local
Governments
(1397)

Other
Institutions

Public Private

RSI : Relevant / Subsidiary Institutions
(*) Number of Established CERT as of 08.05.2017

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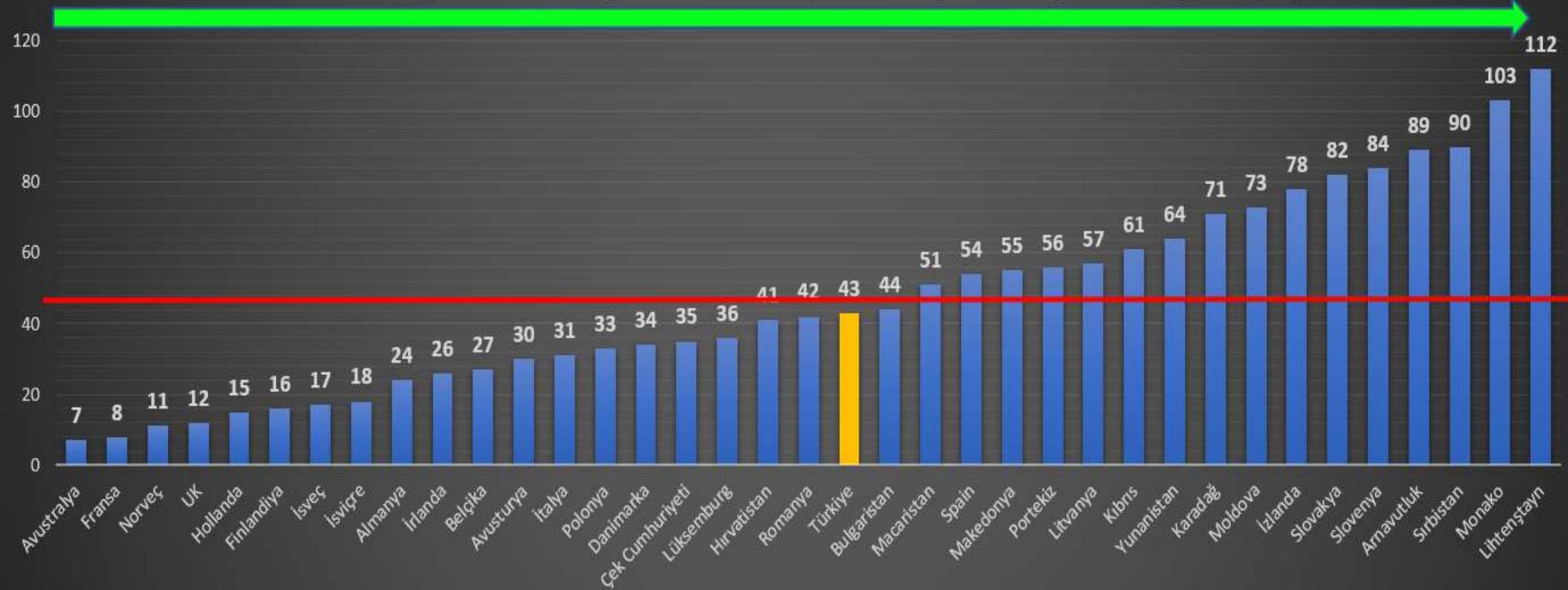
and Cyber World
National Goals on Cyber Security



Cyber Security – Global Benchmarking

193 Countries

ITU Global Cyber Security Index - Europe 2017 (Country Ranking Graph)



Future Plans on National Cyber Security Super Structure

CURRENT STATE

Strategy & Action Plan



Ministry of Transport, Maritime Affairs & Communications

Sectoral Support



T.C. BİLİM, SANAYİ VE TEKNOLOJİ BAKANLIĞI
Ministry of Science, Industry & Technology

Regulation & Supervision



BTK
BİLGİ TEKNOLOJİLERİ VE İLETİŞİM KURUMU
Information & Communication Technologies Authority

Operation and R&D



TÜBİTAK
The Scientific & Technological Research Council of Turkey
Cyber Security Institute

Capacity Development & Technical Issues



Bogazici University Cyber Security Center

Private Sector



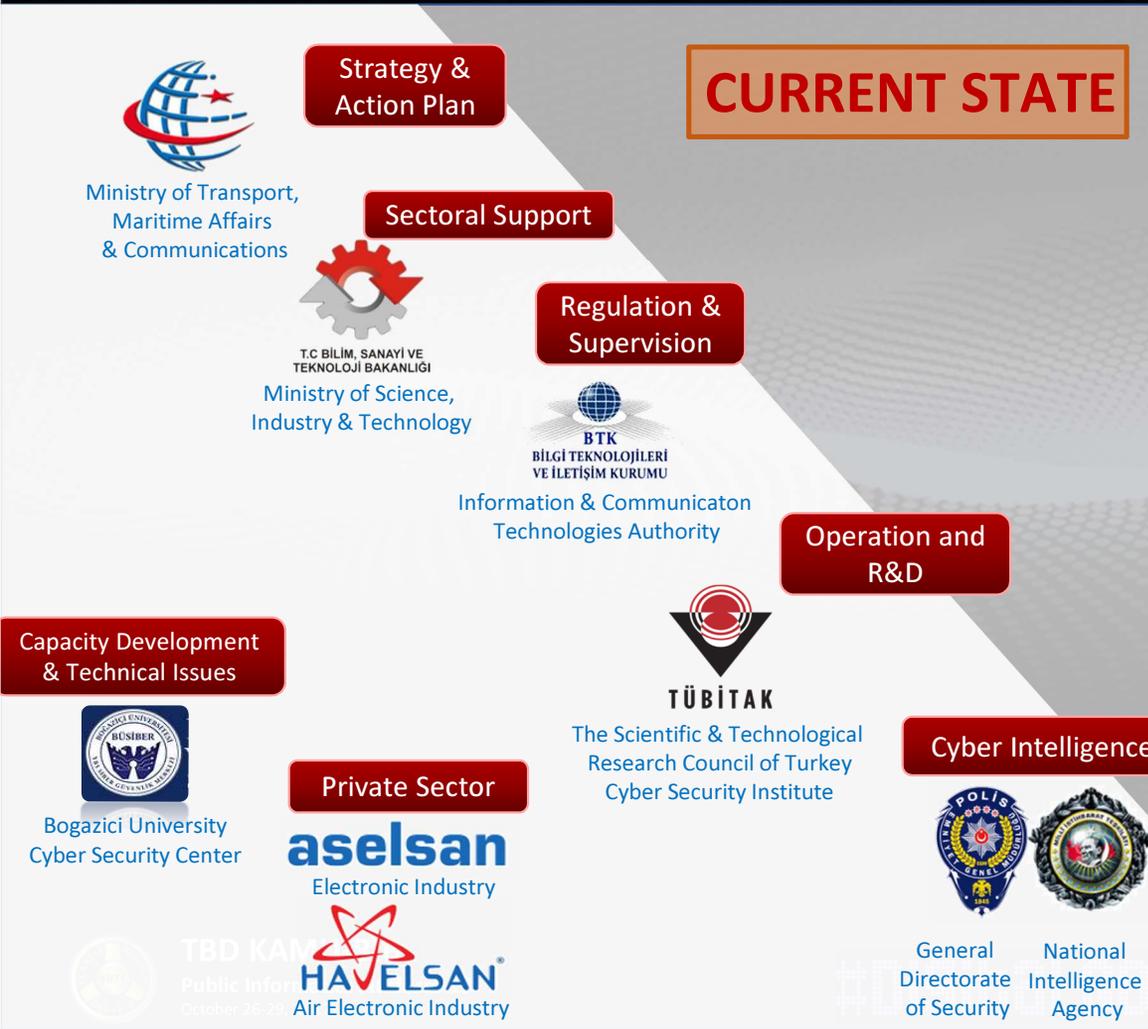
Cyber Intelligence



General Directorate of Security
National Intelligence Agency

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Future Plans on National Cyber Security Super Structure



Single Center in Cyber Security

16 Şubat 2017 - 22:49 | Son Güncelleme : 17 Şubat 2017 - 10:3

Presidency initiated a work to combine the work carried out in different institutions in the field of cyber security under single center.



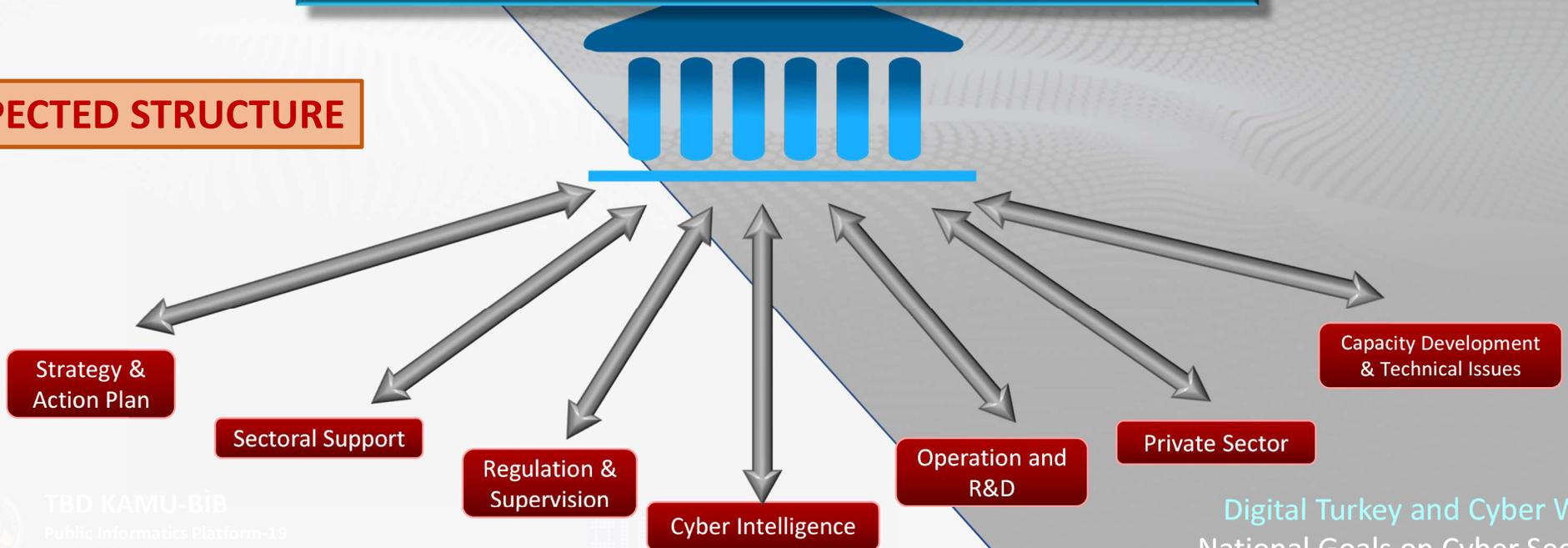
Cumhurbaşkanı Tayyip Erdoğan'ın talimatıyla başlatılan çalışmalar kapsamında, siber güvenlik altyapısının yerleştirilmesi, durum analizi yapılması ve alınması gereken tedbirler ortaya konulacak. Cumhurbaşkanı Erdoğan, FETÖ'nün 15 Temmuz darbe girişiminin ardından kurmaylarına siber güvenlik altyapısının incelenmesi için talimat verdi. Devlet Denetleme Kurulu ve Erdoğan'ın teknoloji kurmaylarının yer aldığı çalışma kapsamında Bilim, Sanayi ve Teknoloji Bakanlığı, Ulaştırma, Denizcilik ve Haberleşme Bakanlığı, Bilgi Teknolojileri ve İletişim Kurumu ile TÜBİTAK gibi kurumlarda ayrı ayrı yapılan siber güvenlik çalışmalarının tek çatı altında birleştirilmesi planlanıyor.

<http://www.hurriyet.com.tr/siber-quvenlige-tek-cati-emri-40368316>

Future Plans on National Cyber Security Super Structure

- ✓ Top Level **Coordination** in Cyber Security
- ✓ Strongest support for **National Solutions** (Software & Hardware)
- ✓ Qualified HR **Capacity Development**

EXPECTED STRUCTURE



Latest Actions in Turkey

Establishment of
Personal Data Protection Authority
January 30th, 2017



<http://www.kvkk.gov.tr>



National E-Mail System
August 07th, 2017

Gov.NET Government Secure Network
Legislation: June 21st, 2017
Included Institutions: 23%



E-Government & Cyber Security CIO

Chairman: Prime Minister UnderSecretary
Participants: Undersecretary of each Ministry
Period : Each Month, regularly (*Since March 2017*)
Purpose : High Level Monitoring & Coordination

<http://www.hurriyet.com.tr/milli-e-posta-sistemi-geliyor-40542359>
<http://www.edevlet.gov.tr/wp-content/uploads/2017/08/03.08.2017-e-Devlet-Koordinasyon.pdf>
<http://www.edevlet.gov.tr/2017/08/04/agustos-ayi-e-devlet-koordinasyon-toplantisi-gerceklestirildi/>

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Latest Actions in Turkey

Government Integrated Data Center
State: Feasibility Analysis



Havelsan
Cyber Defence Technology Center
(SİSATEM)
23rd March 2016



STM Cyber Fusion Center
17th May 2016

Turkish Armed Forces (TAF) - Cyber Defence Command
Cyber Defence Operation Center
11th July 2017



HAVELSAN Inc. is an affiliated company of
Turkish Armed Forces Foundation

STM Defense Technologies Engineering and Trade Inc. is
for support services for Turkish Armed Forces (TAF) and
Undersecretariat for Defence Industries (SSM)



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Latest Actions in Turkey

Government-Wide **ISO 27001 Certification**

Target: December 31st, 2018



HR Capacity Development as **Cyber Security Expert**

Target: December 31st, 2018

Government-Wide **Cyber Security Tests**

Target: December 31st, 2017

Scope: System & Network Penetration Test

Source Code Analysis, DDoS, Social Engineering ...



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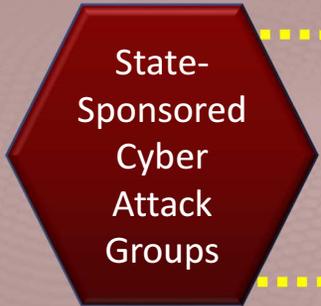
ECOSYSTEM from E-GOVERNMENT to CYBER SECURITY

CYBER THREAT

TARGET

ELECTRONICAL STRUCTURES

MANAGEMENT



IT DEPARTMENTS of PUBLIC AGENCIES



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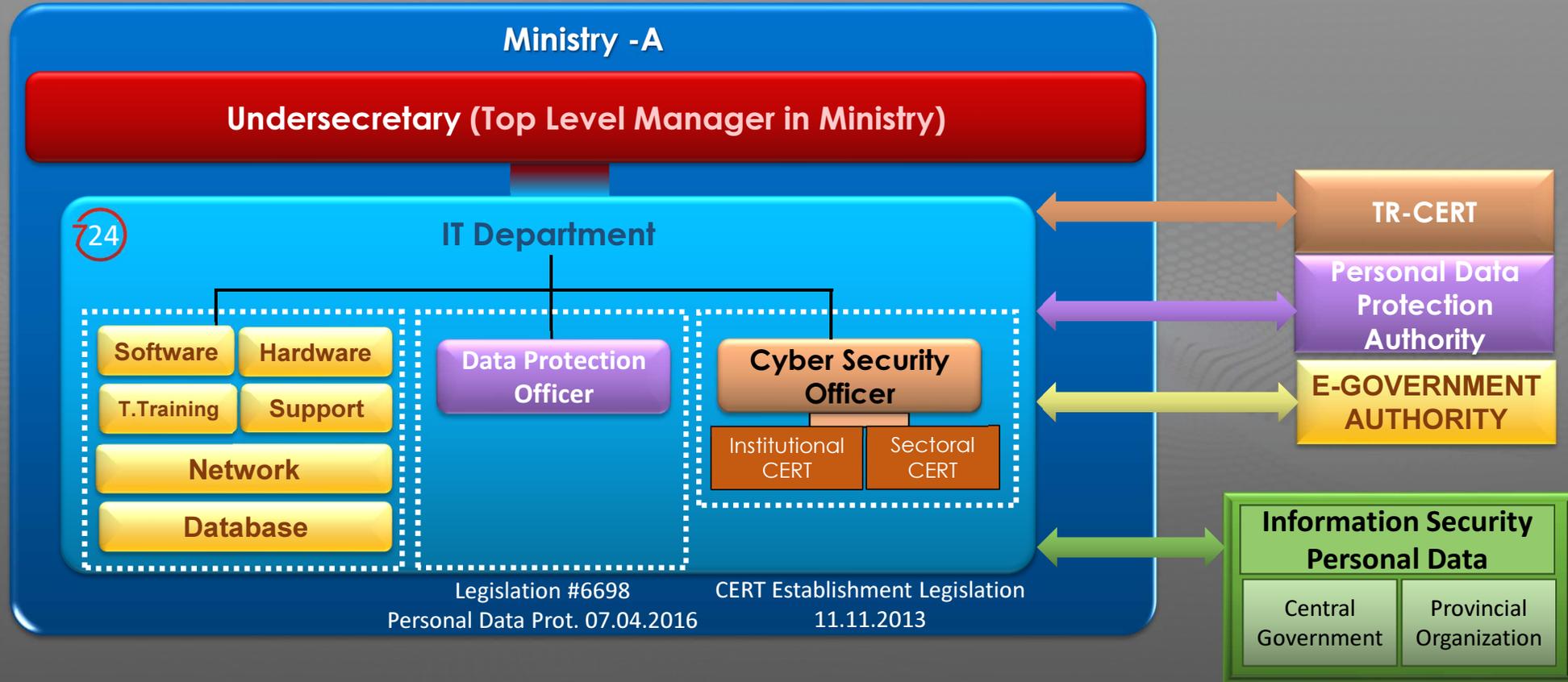
INTEGRATED, EFFICIENT & COMPETENT ADMINISTRATIVE STRUCTURE

CURRENT STATE



INTEGRATED, EFFICIENT & COMPETENT ADMINISTRATIVE STRUCTURE

PROPOSED ADMINISTRATIVE MODEL



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«NATIONAL» CYBER SECURITY

Softwares should have **full-source**:

Open-Source is NOT a must (source-available / shared-source) but it should NOT include and component that does not have source code

Should be developed by **National private sector**:

Government should supply infrastructures and R&D only

The state should not unfairly compete with the private sector for software development:

- The state should implement **frameworks**, libraries, national **R&D** studies and set standards that will support private sector instead of software development
- The national private sector should develop **sectoral** (health, education etc.) and **horizontal** (Electronic Document Management System etc.) software by using them
- **Exceptions** to Public Procurement Law No. 8227 - Article 3 should be re-addressed to support **competition** in the private sector
- The sector should be divided into categories by **leveling**
- The **market in the public sector** ensures the development of these categories

There should be **Sustainable** model:

There should not be **non-product-only solutions** left alone with AR-GE incentives

State-support from **technical, administrative, financial and legal** aspects



Use of **NATIONAL PRODUCTS** without exception as a **National Policy** in the public sector

«WE WILL USE FIRST !»

Dissemination Policy in Public Sector:

- «**Company Rating**» in public procurement with accreditation and certification
- Promotion Model: **R&D** → For successful results «**Production Support**» → Pilot Applications → Support & Development Infrastructure → Positioning in Public
- Current products in the first layer, **National Products** in the second layer
- After transition and maturity, national products in all layers
- At least two **National Solution Policy** in each segment
- **Regional Dissemination**



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Thank You

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