



Cyber-over-RF – Industry perspective and trends

AOC Europe, October 2021
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Cyber-over-RF – Industry perspective and trends

Elbit Systems & Sigmabit at a glance

What is Cyber-over-RF (CRF)

Operational users and use cases of CRF

Classical EW and CRF

General Cyber and CRF

Trends and next steps in the domain

Summary

AGENDA

The Company at a Glance

OUR MISSION

To empower our customers
with tools and
technologies necessary
to face the future with
confidence.



Founded in 1966



Headquarters in Haifa, Israel



Over \$4.5B in sales*



Publicly traded (NASDAQ, TASE)



Subsidiaries in numerous countries



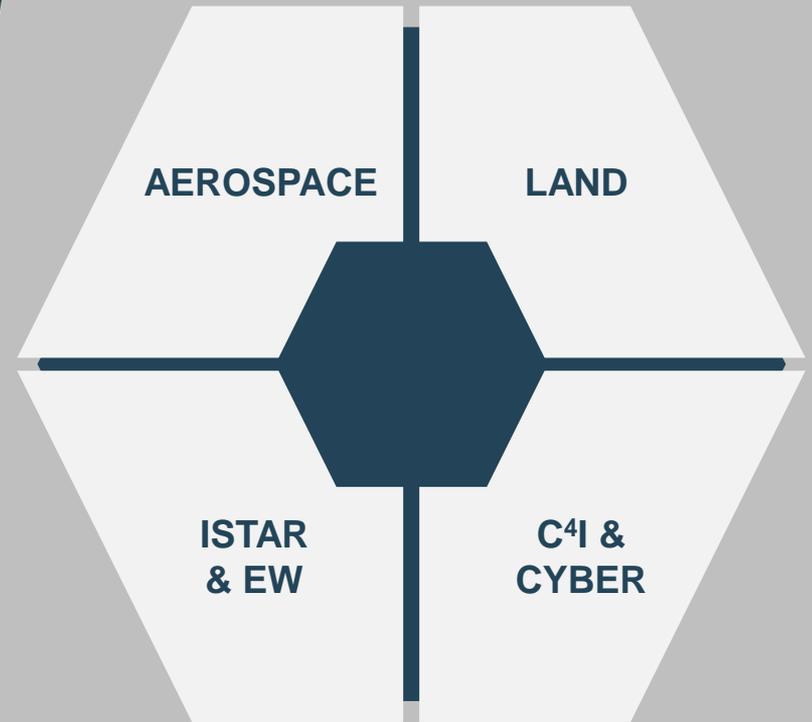
**~16,500 employees of which 55%
engineers**

Business Structure

Our businesses
are organized in

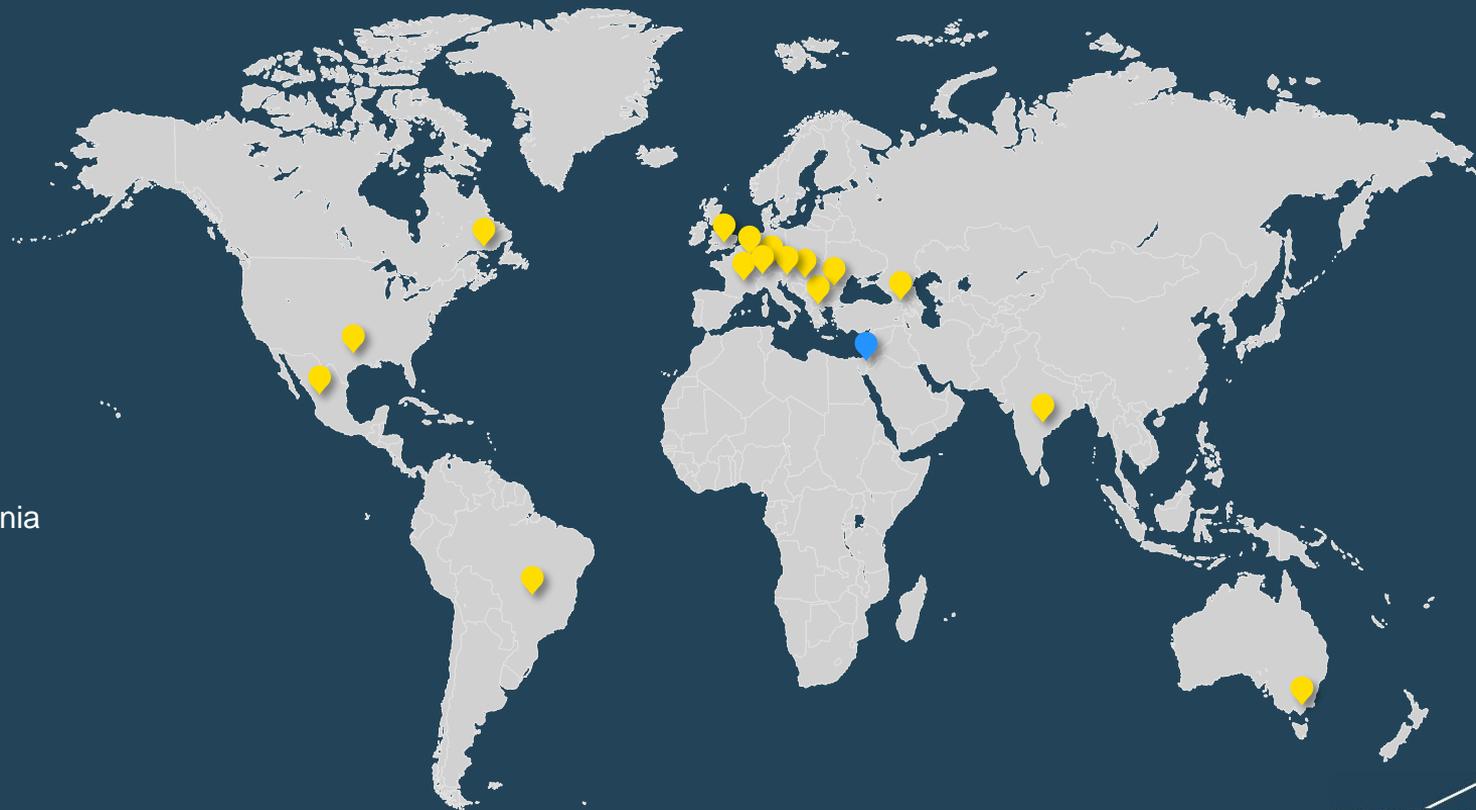
4
Divisions

in Israel



Subsidiaries - Global Presence

Australia
Austria
Belgium
Brazil
Canada
France
Georgia
Germany
Hungary
India
North Macedonia
Mexico
Romania
Switzerland
UK
USA



A Comprehensive Portfolio



Air & Space



Land



Naval



Unmanned



Cyber



Homeland Security



Commercial

Beer Sheva – The Israeli National Cyber Capital

REASONS FOR SUCCESS - PARTNERS IN VISION



Leveraging the potential of BGU centers of excellence

Open to industry and focused on an applicable approach



City of the future

Growth potential and motivation to succeed

Leading in number of engineers graduating annually

GLOBAL TECH INDUSTRY



Vast experience in the creation of leading science and hi-tech parks

Spearheading the creation of world-class work environments

Home to some of the world's top companies

GOVERNMENT OF ISRAEL

IDF Technology Campus

National incentives for tech companies

National Cyber Complex

Vast investments in Infrastructure



KUD International

Global developer specializing in PPP projects

Sigmabit at a glance



- Established at 2015
- Acting as the leading Cyber-RF house in Israel
- Subsidiary of Elbit Systems EW and SIGINT Elisra company
- Specializes in Security and Intelligence solutions
- Vast experience with governmental organizations around the world
- Over 75 employees – more than 90% technologist – BSc, MSc, PhD, Elite Israeli intelligence units alumni

Global Trends in the Cyber Domain

Connectivity

Emerging use of wireless connectivity
Personal & Military communications

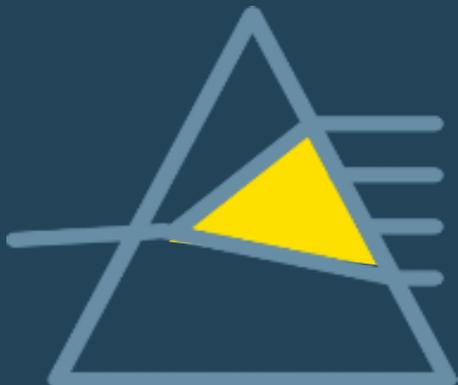
Awareness

Users and customers rising awareness

Defense efforts

Endpoint: OS, application levels
Network level
Low level is overlooked

Sigmabit's vision and core business



OUR Vision

To dominate the RF medium

with cutting edge cyber techniques

**allowing operational and
tactical superiority**

What is Cyber-over-RF (CRF)



Gaining control of the device over the RF medium



Accurate Geo-Location



Identities extraction



All Protocols – Content access and manipulation



Operational users and use cases of CRF – Market overview



Gov Intelligence

Federal agencies,
justice departments

Access to contents

HLS

Police, Federal
agencies, Correctional
facilities

Identities extraction &
location

Army

Military Intelligence

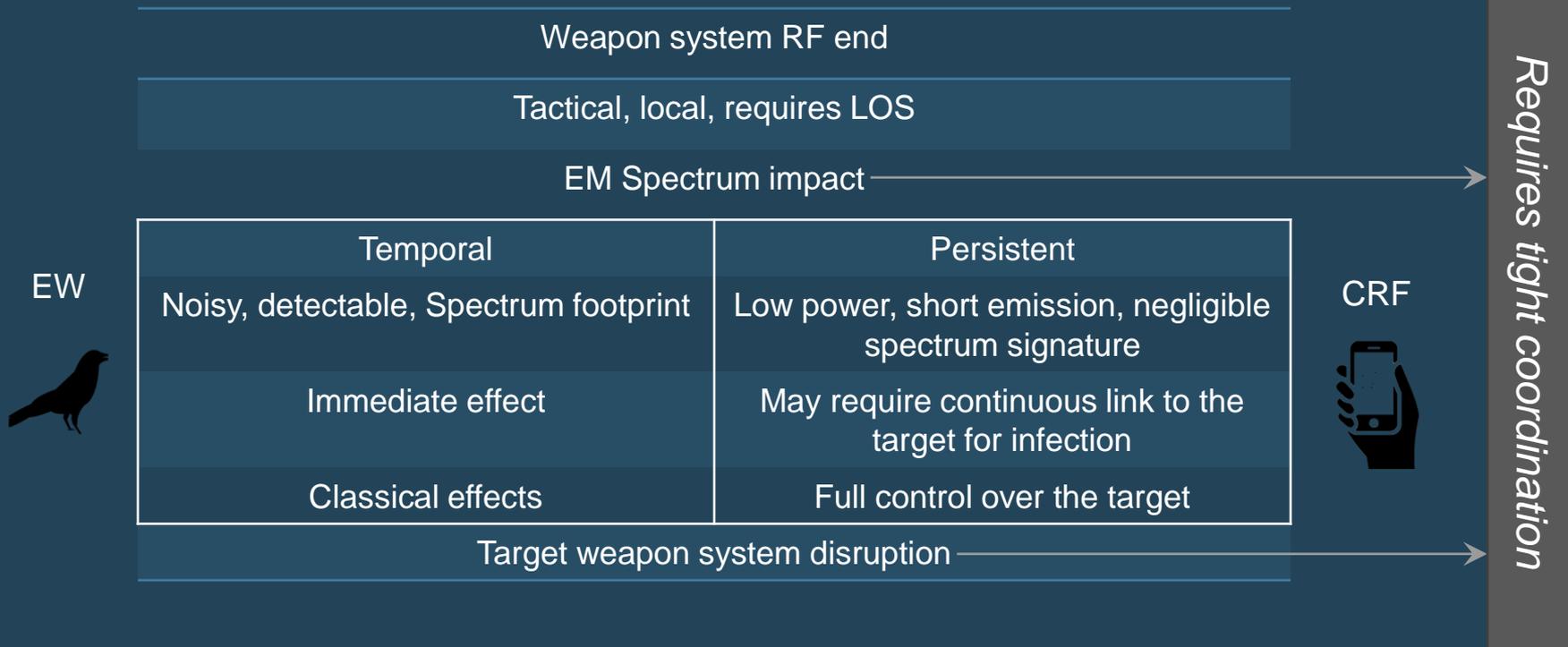
Disruption

Customer needs and characteristics

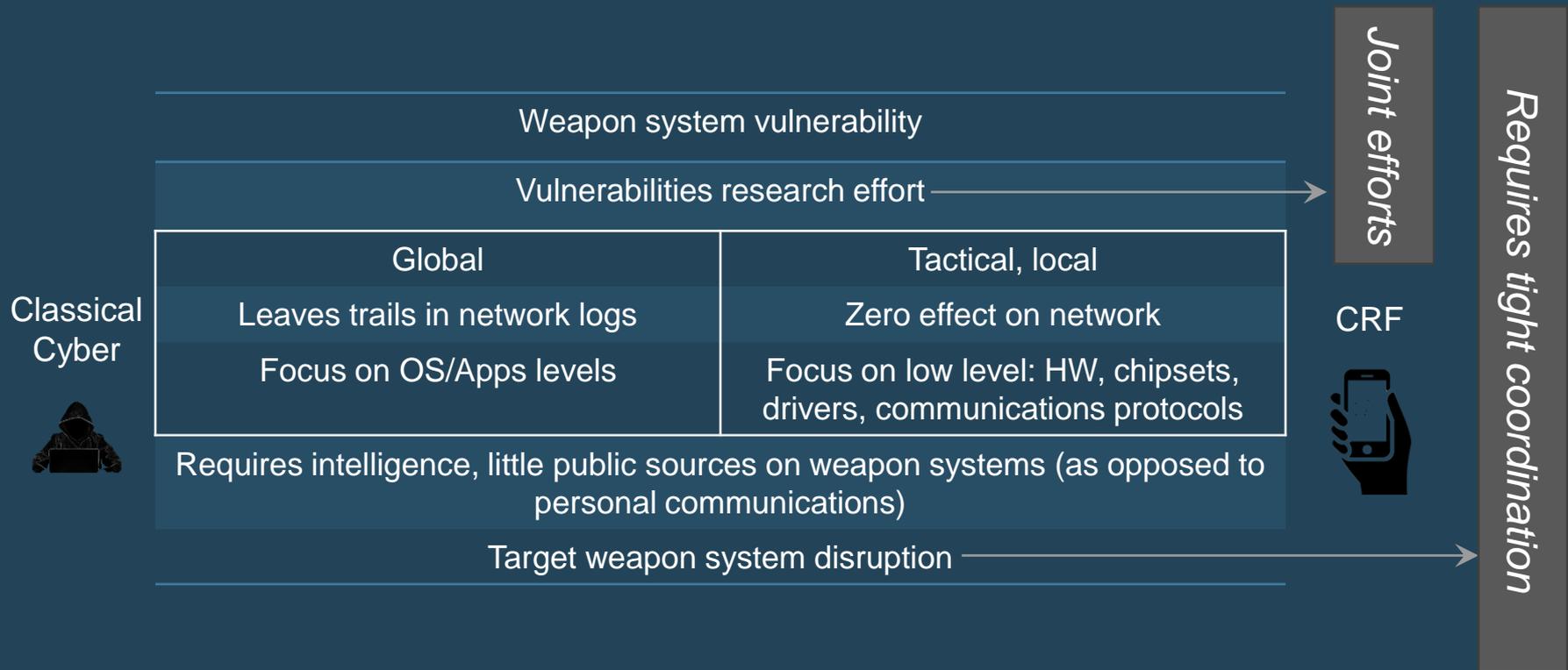
Market segment	Typical deal type	Main solution features	Solution availability in market	Main challenges
Intelligence	Project/Product	Access to contents, Trojan infection	High	Full value chain: vulnerabilities, exploits, Trojans, data conveyance, intelligence extraction systems
HLS	Product	Identities extraction and location	Medium	Hermeticity, quality of solution
Military	Project	Prevention, disruption, deception	Low	Intelligence sharing, national permits

Elbit's core market

Classical EW and CRF



Classical Cyber and CRF



Trends and next steps in the domain

- The cyber arena changes in a fast pace
 - solutions must be generic, modular, and adaptive
- Single-use solution is ineffective and not scalable
 - Solutions must cover the full RF spectrum and be able to support different protocols
- Lab-to-operation-capability time is too long, devices are updated constantly
 - Powerful SDR as a technological cornerstone
- Mixing expertise and cultures
 - Multi-disciplines – (Antenna, RF, algorithms, signal processing, hardware, software) + VR, hacking
- Breaking walls between EW, CRF, Classical cyber and Sigint



Summary

- CRF is an emerging domain, holding significant operational potential, expanding the boundaries of both EW and classical cyber and completing them
- Different types of users need different solutions – one size doesn't fit all
- Military users' requirements are the most challenging and unique
- Technological developments enable coping with different protocols, devices and frequency bands simultaneously, by a single system
- Sigmbit – a one-stop shop for CRF solutions, from vulnerability to antenna

THANK YOU

elbitsystems.com

