



Intelligent **Cyber** Surveillance

AI Video Analytics & Biometrics!

Dr David E. Probert
VAZA International

Dedicated to Ethan, Alice, Hugh, Matthew, Abigail, Micah, Roscoe & Tatiana!

38th International East-West Security Conference

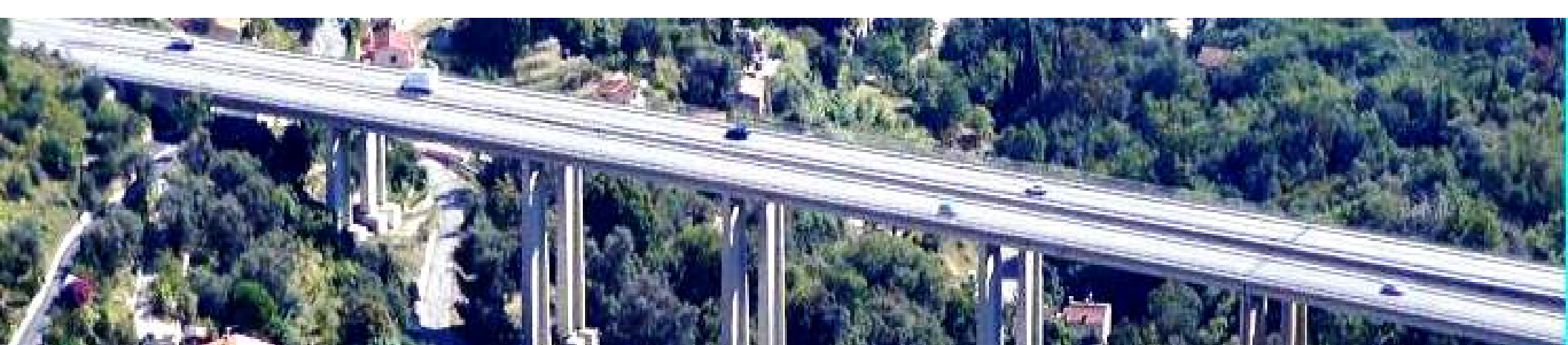
**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©





Интеллектуальный кибер-наблюдение

AI Видеоаналитика и биометрия!

www.Valentina.net/NICE2018/

Dedicated to Ethan, Alice, Hugh, Matthew, Abigail, Micah, Roscoe & Tatiana!

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****
- AI Video Analytics & Biometrics -
Nice, France – 5th/6th Nov 2018
© Dr David E. Probert : www.VAZA.com ©



“CyberVisions for Business & Governments!”

Theme (1) - *CyberSecurity for Critical Infrastructure: Business & Governments!...*



- *CyberSecurity for Critical National Infrastructure (CNI):*
- *Case Studies of National Government Cyber Programmes*
- *Operational Cyber Standards, Laws & Regulations*

“Cyber Strategies for Critical Business”

6th Nov: 9:45 – 10:30

Theme (2) – *Intelligent Cyber Surveillance: AI Video Analytics & Biometrics!...*



- **21stC** Cyber Landscape for Business & Government Surveillance
- Advanced Surveillance Tools using AI Video Analytics & Biometrics
- Case Studies of Sector Surveillance: Transport, Retail, Culture, Defence...

“Cyber Surveillance”

6th Nov: 12:15 – 13:00

Theme (3) – *CyberVision* 2020 to 2030: YOUR 21st C CyberSecurity Toolkit!...



- *Understanding and Mapping the Worldwide Cyber Threats*
- *Exploring New Cyber Tools using AI & Machine Learning*
- *Discussion of Cyber Scenarios for **2020 – 2025 – 2030** & Beyond !...*

“Cyber ToolKit”

6th Nov: 16:15 – 17:00

Download: www.valentina.net/NICE2018/
38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

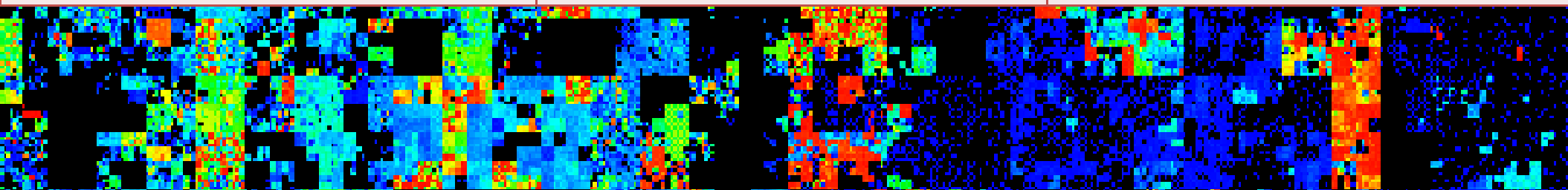
© Dr David E. Probert : www.VAZA.com ©



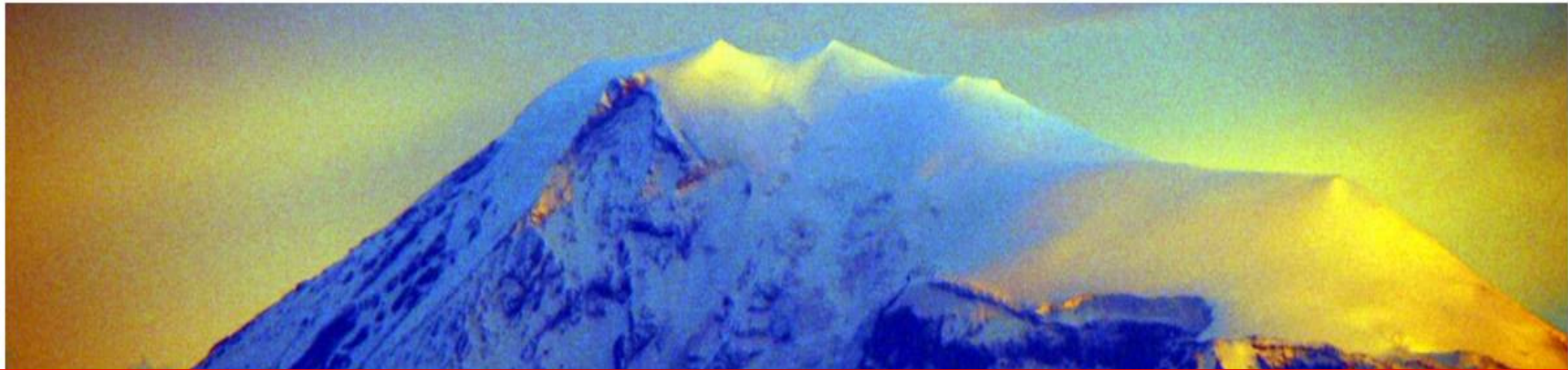
Intelligent **Cyber** Surveillance!...



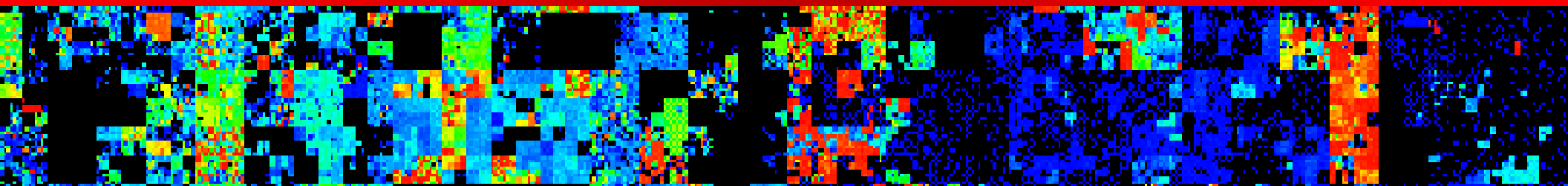
1 – 21stC Background Perspectives “Cyber Intelligence”	2 – Integrating Cyber & CCTV Tools “Cyber Convergence”	3 – Case Studies: Recent Events “Urban Terrorism”
4 – Smart Cities & Event Surveillance “Crowded Places”	5 – Advanced Cyber Analysis Tools “AI Video Analytics”	6 – Biometric & Behaviour Profiles “Cyber Biometrics”
7 – Transport, Retail, Culture, Defence “Sector Surveillance”	8 – Cyber Surveillance Visions!... “Cyber 2025 Futures”	9 – YOUR Security & Surveillance! “YOUR Business Plan”



Intelligent **Cyber** Surveillance!...



1 – 21stC Background Perspectives “Cyber Intelligence”



Public, Private & Dark Web:

- Visible & Hidden Layers of the Internet -

Public Web: Amazon, eBay, Google, Facebook, Wikipedia & Info.....

Private Web: Government, Agencies, Critical Sectors.....

Dark Web: Cyber Criminals, TOR & VPN, Hacktivists & Illegal Trades.....

21stC Cybersecurity ***“Threats & Trends”***

- *25 Year* Evolution of CyberCrime & CyberTerror: *1993-2018*
- *“21st Century Colonisation”* of Worldwide Internet by eCriminals, Hacktivists and CyberTerrorist Organisations
- *Global Connectivity* of Critical National Infrastructure (CNI) significantly increases CyberTerror Risks for ALL Nations!
- *High Security Risks:* Most Governments & Businesses are currently not well secured against Cyber Attacks & eCrime

.....and the “Bad Guys” are currently winning!

21stC Cybersecurity *“Threats & Trends”*

- *25 Year* Evolution of CyberCrime & CyberTerror: *1993-2018*



.....and the “Bad Guys” are currently winning!

Image: David Shankbone: Occupy Wall Street – Sept 2011

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****

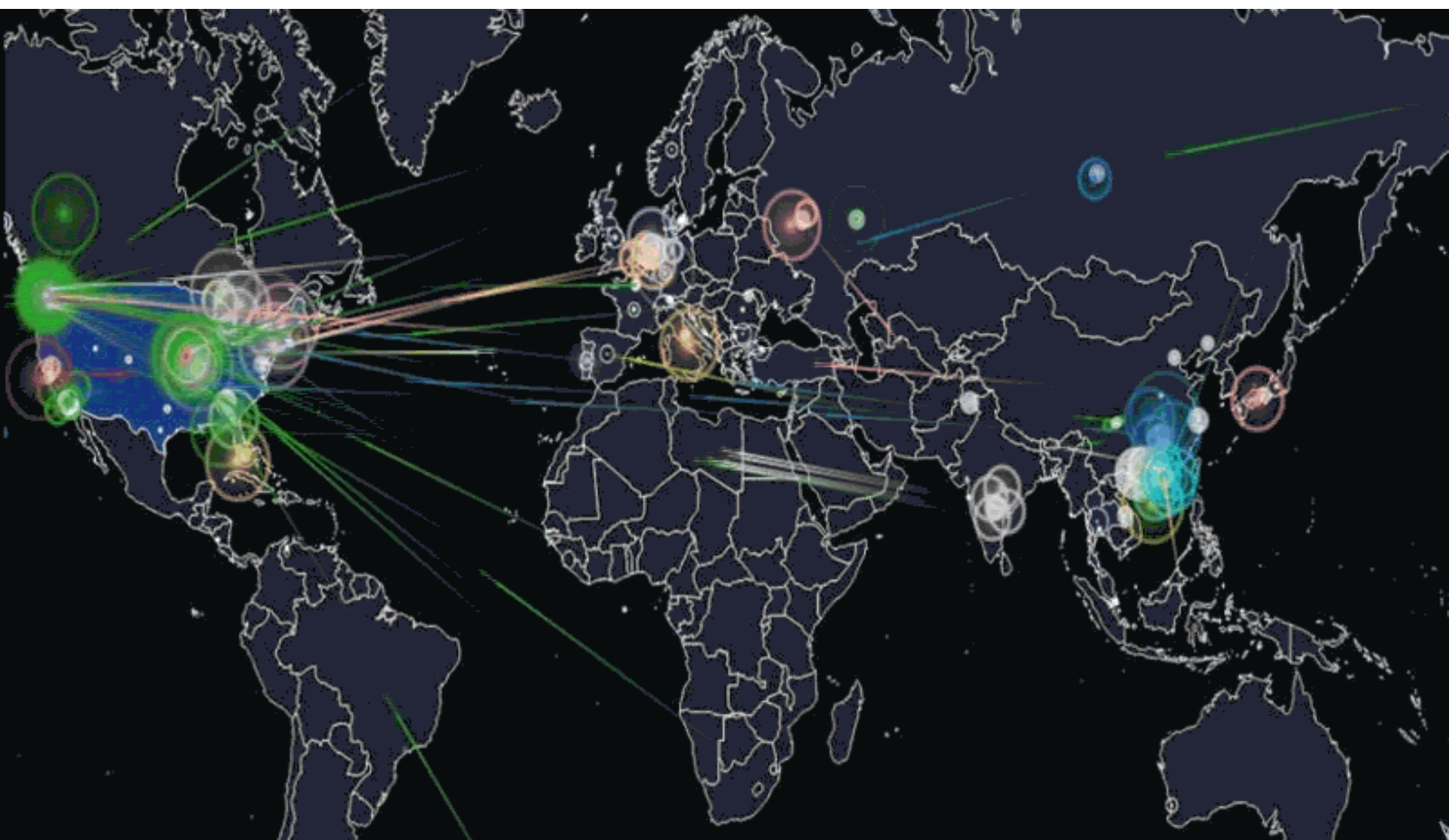
- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

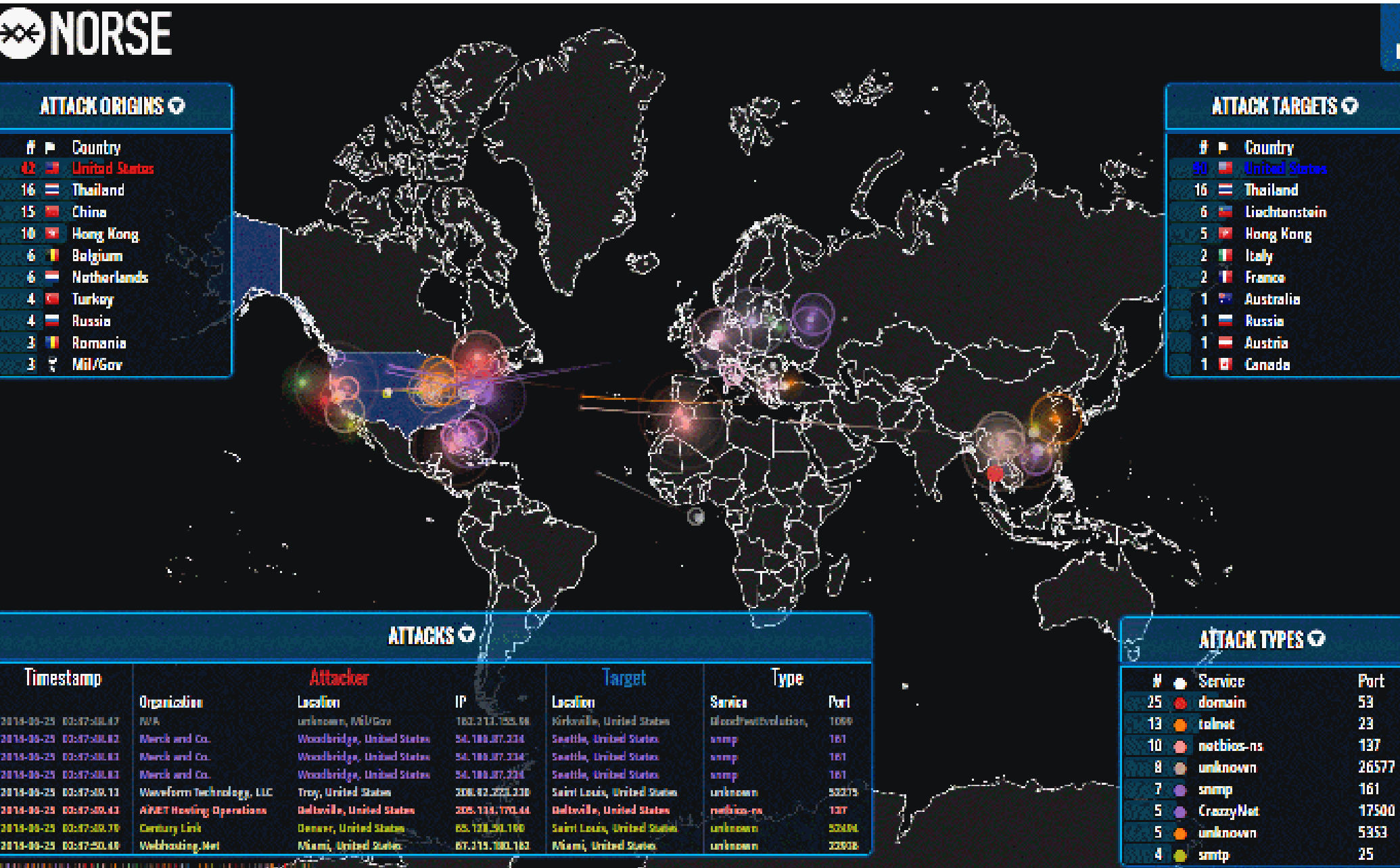
© Dr David E. Probert : www.VAZA.com ©



Real-Time Cyber Threat Map @ *Light Speed*



Norse CyberMap: *Real-Time Cyber Threats*



Kaspersky CyberMap: *Real-Time Threats*



Link: <http://Cybermap.kaspersky.com>

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Global RansomWare **CyberAttack**

“WanaCrypt0r 2.0” - 12th May 2017



Global Impact on **Critical Services**: UK, Russia, Spain, Italy, China, USA & Beyond!

...More than **200k** Systems in **150+** Countries!

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****

- **AI Video Analytics & Biometrics** -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Global RansomWare **CyberAttack**

“WanaCrypt0r 2.0” - 12th May 2017



Global Impact on **Critical Services**: UK, Russia, Spain, Italy, China, USA & Beyond!

...More than **200k** Systems in **150+** Countries!

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****

- **AI Video Analytics & Biometrics** -

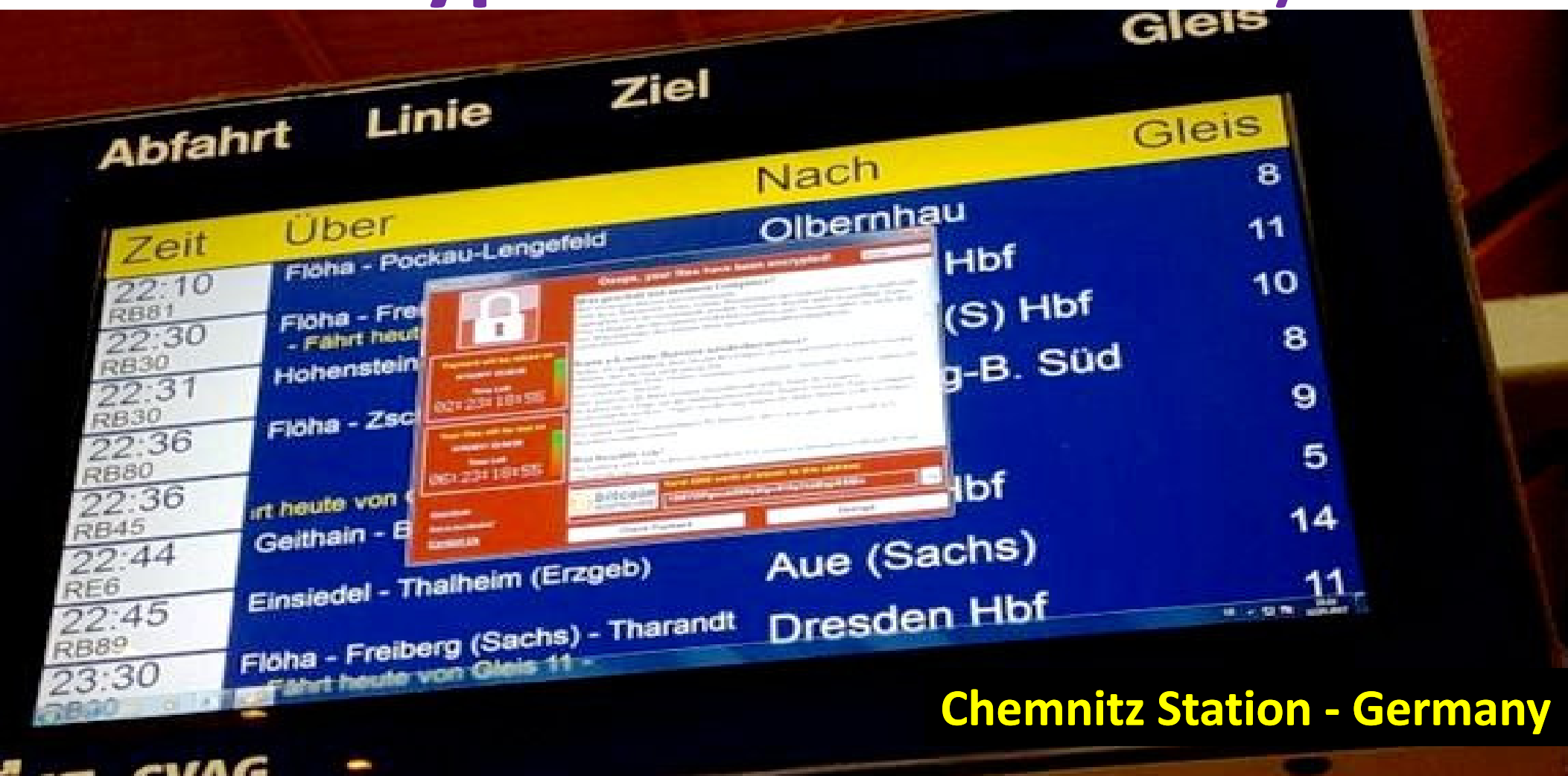
Nice, France - 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Global RansomWare **CyberAttack**

“WanaCrypt0r 2.0” - 12th May 2017



Chemnitz Station - Germany

Global Impact on **Critical Services**: UK, Russia, Spain, Italy, China, USA & Beyond!

...More than **200k** Systems in **150+** Countries!

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

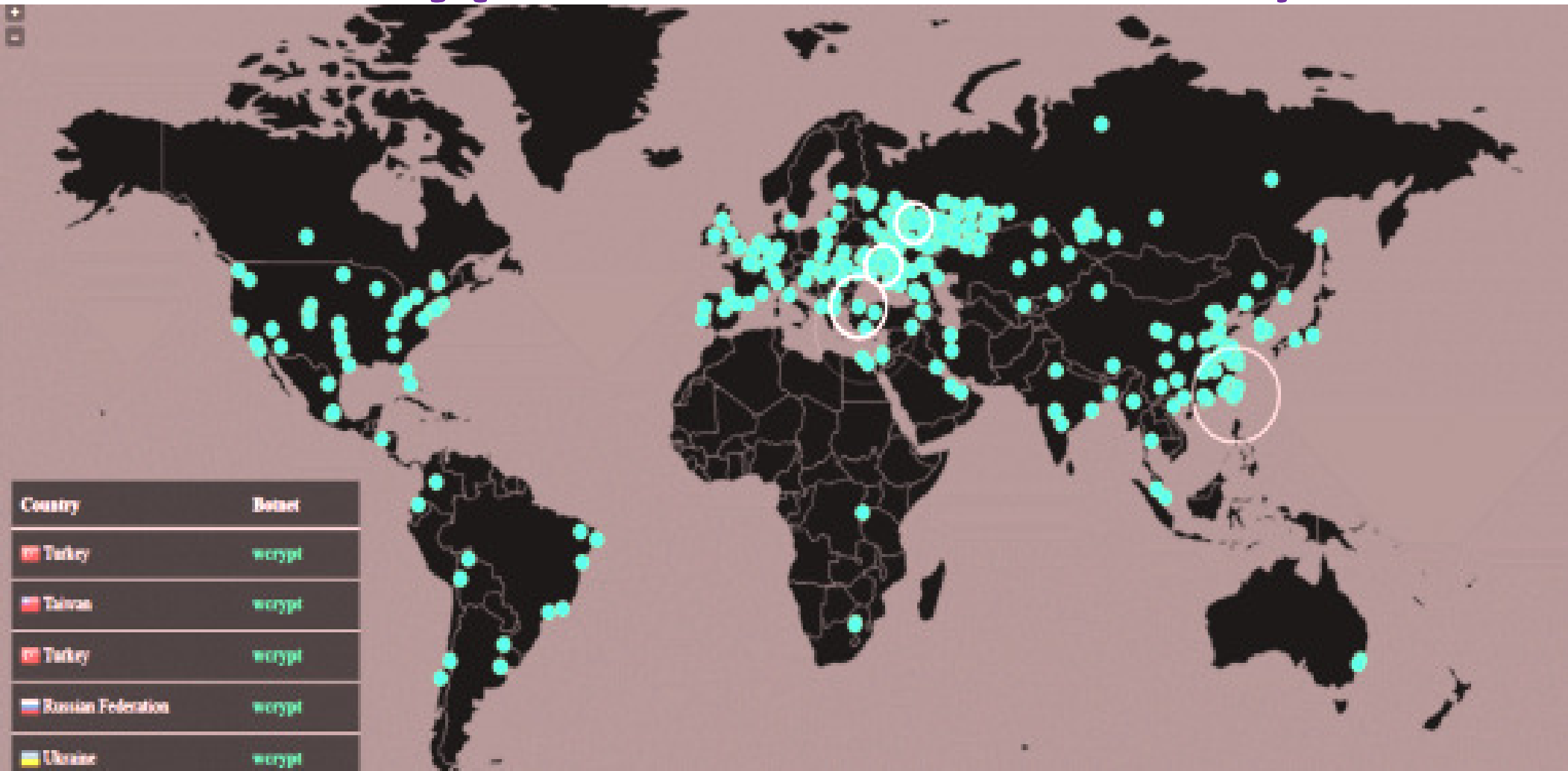
Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Global RansomWare **CyberAttack**

“WanaCrypt0r 2.0” - 12th May 2017



Global Impact on **Critical Services**: UK, Russia, Spain, Italy, China, USA & Beyond!

...More than **200k** Systems in **150+** Countries!

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****

- **AI Video Analytics & Biometrics** -

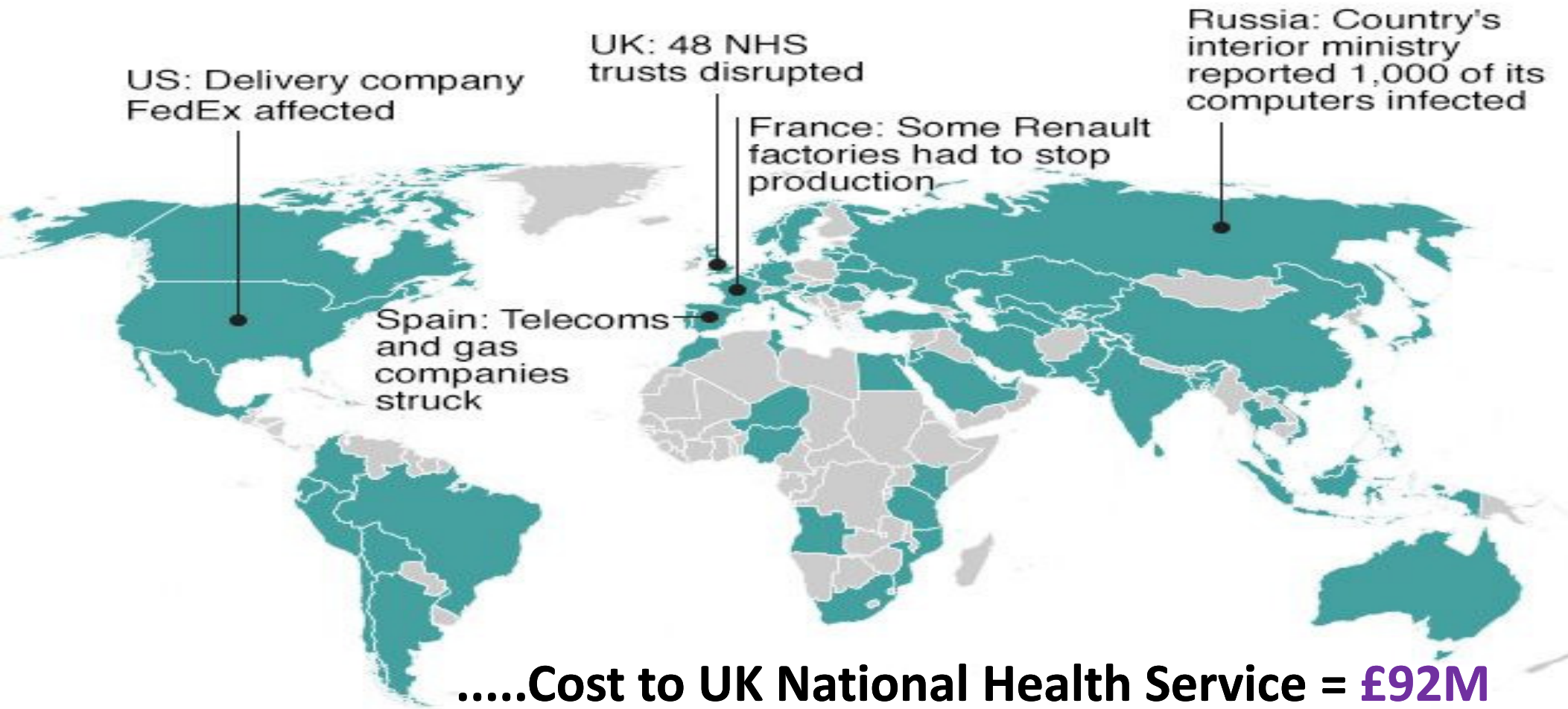
Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Global RansomWare CyberAttack

Countries hit in initial hours of cyber-attack



*Map shows countries affected in first few hours of cyber-attack, according to Kaspersky Lab research, as well as Australia, Sweden and Norway, where incidents have been reported since

Source: Kaspersky Lab's Global Research & Analysis Team

BBC

...More than 200k Systems in 150+ Countries!

38th International East-West Security Conference

** "Intelligent Cyber Surveillance" **

- AI Video Analytics & Biometrics -

Nice, France - 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



CyberAttack: **Tesco Bank** – Nov 2016



£16.4m Fine from UK FCA – Financial Conduct Authority

6th Nov 2016: Cyber Criminals from Brazil & Spain hack 40,000 TESCO Bank Accounts with reported Theft of £2.5m from 9,000

Command & Control (C2) *Malware* Servers

- “Global 21st Century *Cyber-Colonisation*” -



Image: www.fireeye.com – FireEye Inc (c)

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Typical C2 *Malware* Signatures

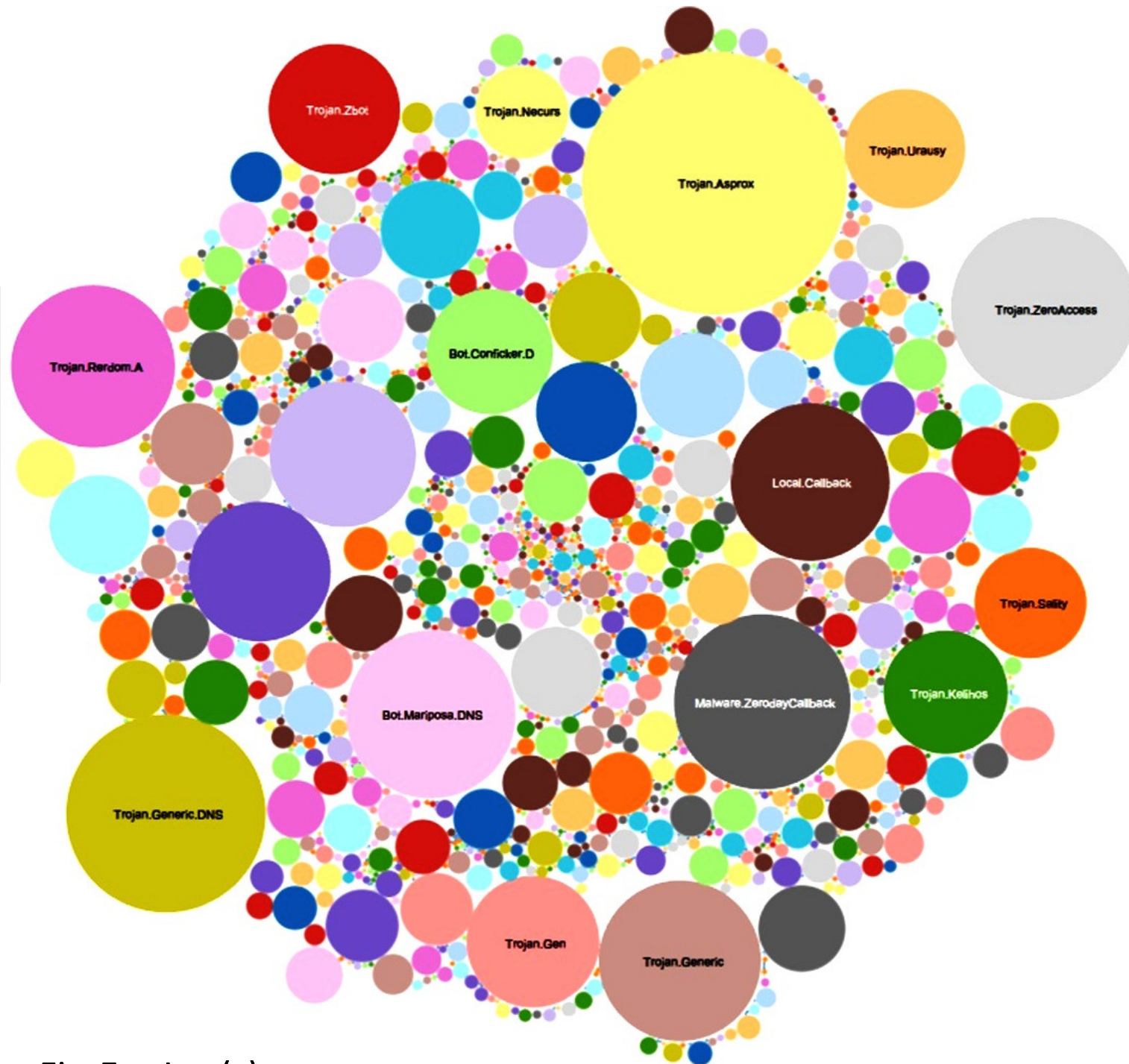


Image: www.fireeye.com – FireEye Inc (c)

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



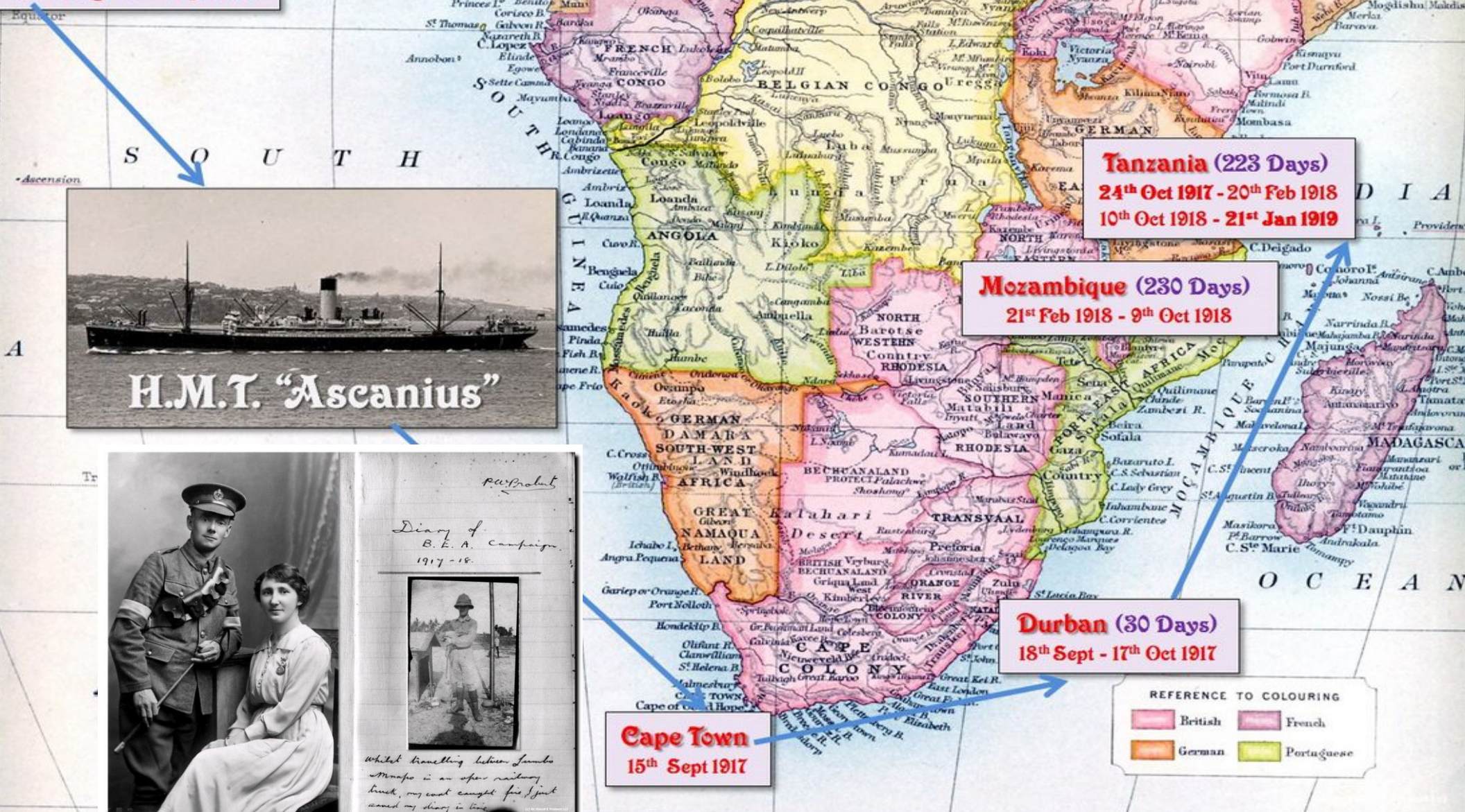
Intelligent Real-Time *Cyber* Tools

- Defence against 21stC Terror Attacks requires Cyber Operations in *Real-Time @ Light Speed!*
 - a) Smart Target *Surveillance*, Profiling & Tracking
 - b) User & Device *Authentication*: “Internet of Things”
 - c) Cyber*Biometrics* & *AI VideoAnalytics*: Pre/Post Attack
 - d) Real-Time Analysis of *Social Media*, Mail & Comms
 - e) *Self-Adaptive* User, IT Asset & Net Traffic *Modelling*

.....*Mitigation of Attacks* requires *Intelligent Cyber Computing Solutions* running *@ Light Speed!*

Route Map of **Percy Probert's** East African Campaign Travels: 1917 - 1919

Freetown, Sierra Leone
30th Aug - 2nd Sept 1917



Diary Link: www.valentina.net/PWP/

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France - 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Royal Engineers: **Radio Surveillance** for **Terrorists** – 1917 - **Mozambique & Tanzania** – Grandfather: **Percy Probert**!



Diary Link: www.valentina.net/PWP/

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

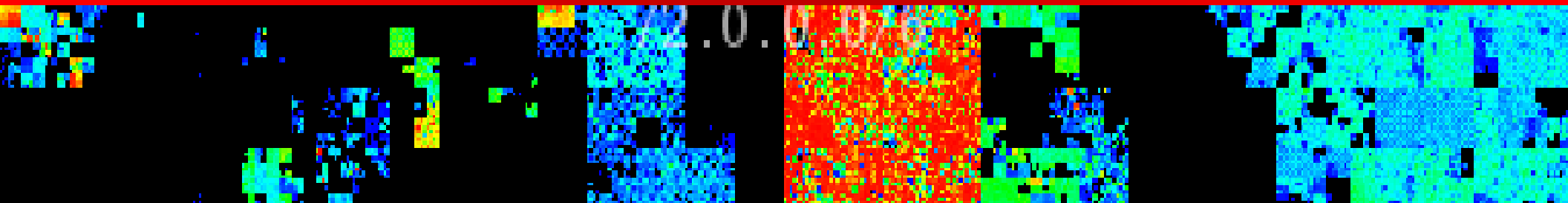
© Dr David E. Probert : www.VAZA.com ©



Intelligent **Cyber** Surveillance!...



2 – Integrating Cyber & CCTV Tools! “Cyber Convergence”



Cyber-Physical Threat Scenarios

- **Physical “Penetration”**: Operations Perimeter penetrated to allow theft or corruption of Cyber Information / IT DataBases and Confidential Plans
- **Cyber “Hack”**: Malicious changes to Cyber Access Controls & IT Databases to allow Criminals/Terrorists to enter Target Facilities (such as Military Bases, Banking HQ, Telco/Mobile Network Operations)
- **Convergent Threats** – Criminals/Terrorists will attack at the weakest links which in the 21stC will be BOTH Cyber Network Operations and Physical Security Ops

.....**Cyber Attacks** are now fully industrialised with Malicious Code “Kits” & Botnets for sale *“by the hour”* on the **DARKNET**

Regional CCTV *Control & Surveillance*



CCTV Control Room Operators with Multiple Displays need **Cyber Analysis Tools Including **High Speed Video Analytics, Facial Recognition and Data Mining Tools****

VIDSYS: Converged Cyber-Physical Security



www.vidsys.com : New York Traffic Control Centre

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



VIDSYS: Converged Cyber-Physical Security



www.vidsys.com : New York Traffic Control Centre

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

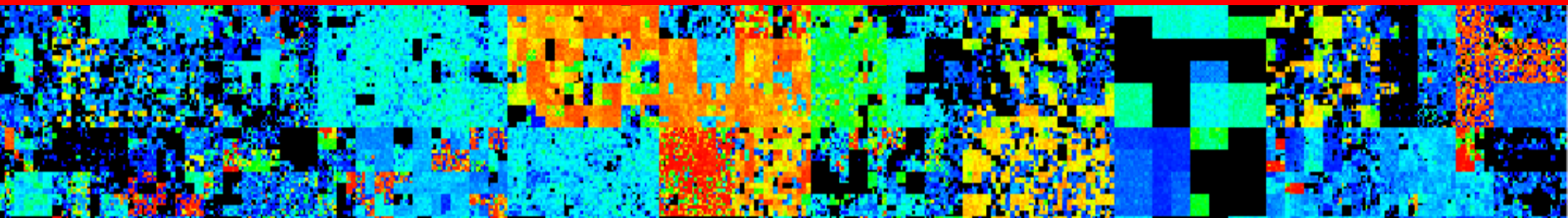
© Dr David E. Probert : www.VAZA.com ©



Intelligent **Cyber** Surveillance!...

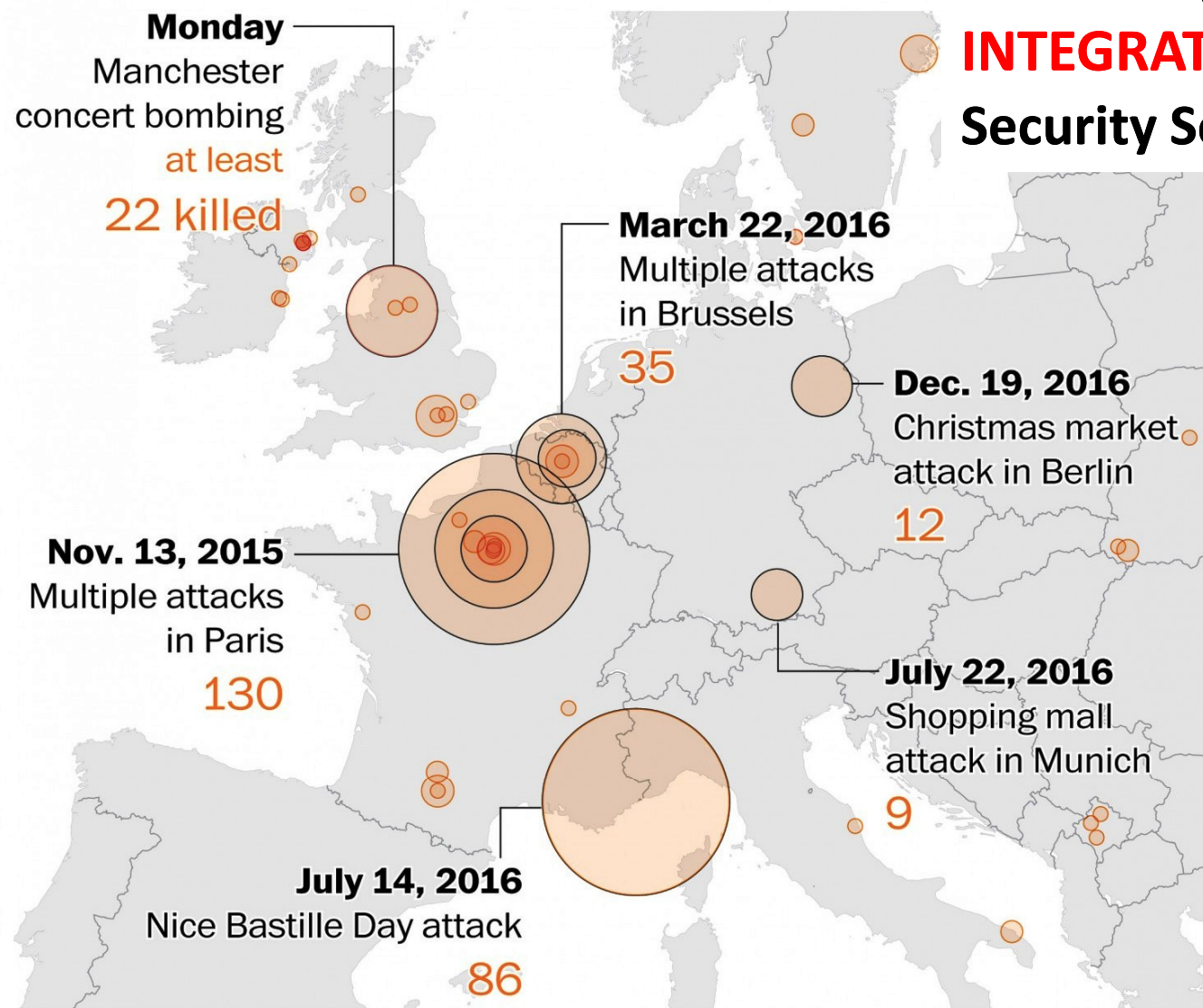


3- Case Studies: Recent Terror Events “Urban Terrorism”



21stC Warfare: “Urban Terrorism”

Terror attacks in Western Europe since 2012



Source: IHS Jane's Terrorism and Insurgency Center

THE WASHINGTON POST

Defence against “Urban Terror” needs
INTEGRATION of **PHYSICAL & CYBER**
Security Solutions = **SMART SECURITY**

“Bad Guys” use **Cyber Tools**
& Resources to extensively
Research & Launch Major
Physical Terror Attacks!

- (1) **DarkWeb** for **Weapons!**
- (2) **Research** Urban Targets
- (3) **Social Media** for Comms
- (4) **Recruitment** & Training
- (5) **Ransomware** for CA\$H..

**** “Intelligent Cyber Surveillance” ****

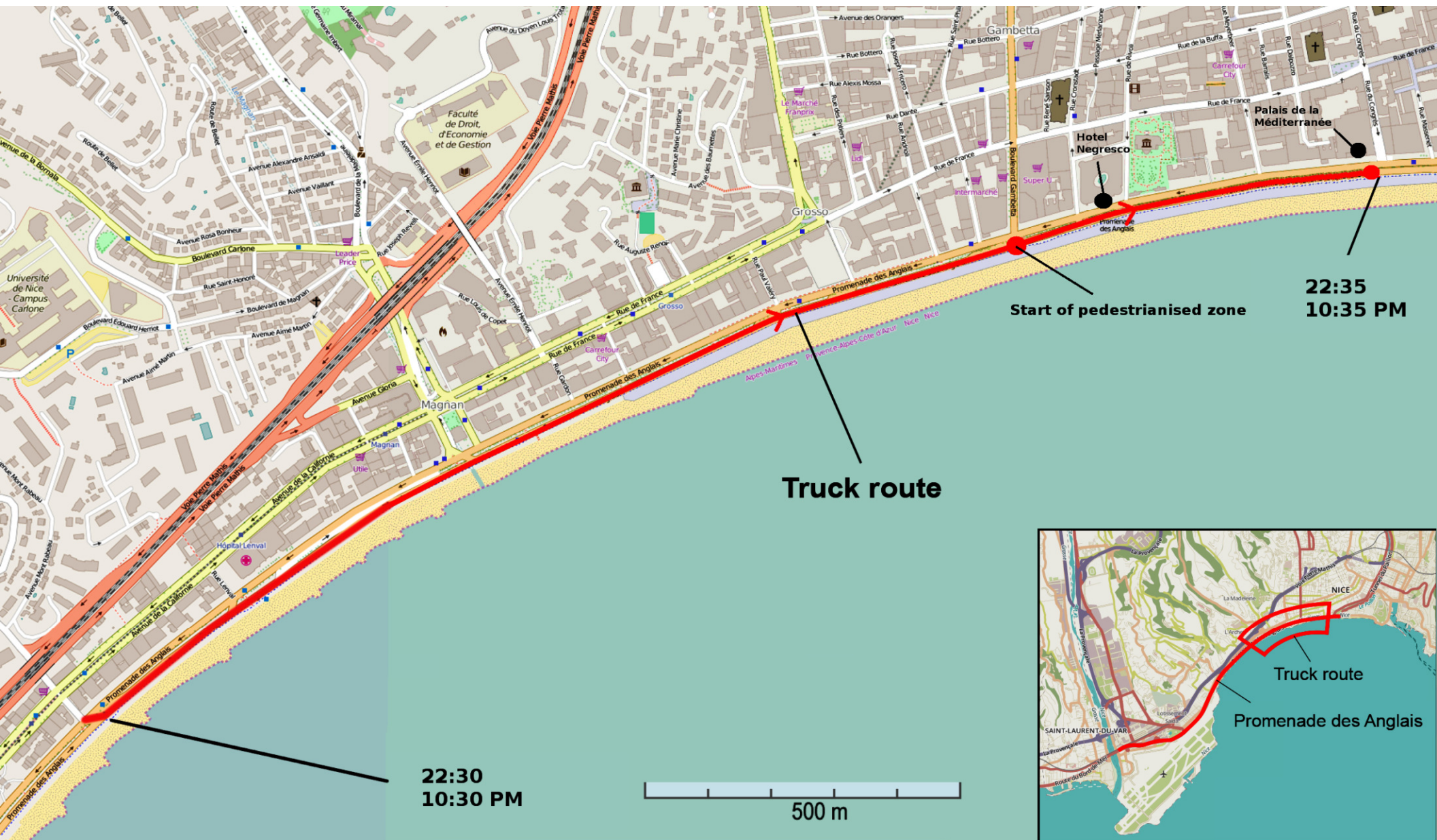
- **AI Video Analytics & Biometrics** -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Nice Truck Terror Attack: 14th July 2016



**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Nice Truck **Terror Attack**: 14th July 2016



Cyber Criminal Team **Skillset!**...

- Skills required by the “**Bad Guys**” to launch and manage major Cyber Crime Campaigns:
 - **ICT:** Cyber Technical Specialist (Hacking Tools)
 - **Finance:** Money Laundering & Campaign Budget
 - **HR-Human Resources:** Headhunting Cyber Talent!
 - **Intelligence:** Recruit “Insiders” in Business/Govt
 - **Project Management:** Co-ordinate Campaign!
 - **Security:** Detect “BackDoors” both in the Physical and Cyber Defences of the Target Business/Govt
- ...In summary, the “**Bad Guys**” will often organise themselves as an *Criminal Cell or Illegal Business!*

Recent Terror Events: *Case Studies*

- **Moscow** – Nord-Ost Theatre – October 2002
- **London** – Metro & Bus Attack – July 2005
- **Paris** – Charlie Hebdo Attack – Jan 2015
- **Tunisia** – Marhaba Hotel, Sousse – June 2015
- **Paris** – Bataclan Theatre – Nov 2015
- **Brussels** - Airport Attack – March 2016
- **London** – Westminster – March 2017/Aug 2018
- **Manchester** – Arena - June 2017

....**ALL** Cultural, Tourist & Transport Facilities are vulnerable to attack in **EVERY** City & Country!

Paris Terror Attack: *Charlie Hebdo-Nov2011*

Deadly attack on satirical French magazine

At least 11 people were killed and 10 injured in a shooting at the Paris offices of Charlie Hebdo, a magazine fire-bombed in November 2011 a day after it carried a caricature of the Prophet Muhammad



Source: Wire agencies

© GRAPHIC NEWS

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Brussels Airport: *Terror Attack–March 2016*



**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Terror Events: **1st Oct 2018 - Wiki**

Date ↕	Type ↕	Dead ↕	Injured ↕	Location ↕	Details	Perpetrator ↕	Part of ↕
1	Suicide car bombing	2 (+1)	5	Mogadishu, Somalia	A suicide car bomber by the group Al-Shabaab struck a EU convoy carrying Italian soldiers in Somalia's capital Mogadishu, killing 2 civilians and injuring at least 5. ^{[1][2]}	Al-Shabaab	Somali Civil War
1	Shooting	3	4	Bosaso, Somalia	Islamic state attackers shot dead 3 Ethiopians and injured 4 in Bosaso town, the attackers fled the scene. ^{[3][4]}	Islamic State	Somali Civil War
1	Bombing	1	2	Kirkuk Governorate, Iraq	A bomb attack by Islamic State insurgents left an Iraqi Policeman dead and as well as 2 others injured in the oil rich province of Kirkuk, Iraq. ^[5]	Islamic State	Iraqi insurgency
1	Bombing	0	0	Hawija, Iraq	A group of Islamic State insurgents placed bombs and detonated them on an electricity pylon in Hawija district in Kirkuk, leaving Iraq's Hawija district in total darkness. ^[6]	Islamic State	Iraqi insurgency
1	Bombing	1	4	Baghdad, Iraq	Two sticky bombs detonated in a Baghdad neighborhood killing a person and leaving four others injured while destroying two vehicles. ^[7]	Islamic State	Iraqi insurgency
2	Suicide bombing	14 (+1)	40	Kama District, Afghanistan	A suicide bomber killed 14 people and injured around 40 at an election rally in the Kama district of the Nangarhar Province, the Islamic State claimed responsibility through Amaq. ^{[8][9]}	Islamic State	War in Afghanistan
2	Shooting, Bombing	3	8	Awaran District, Pakistan	Terrorists opened fire and bombed a convoy killing 3 Pakistani Security personnel and injuring 8 more at the Awaran District of Balochistan, Pakistan, no group has claimed responsibility although separatist groups have done similar attacks in that area in the past. ^{[10][11]}	Balochistan Liberation Army (suspected)	Insurgency in Balochistan

Terror Incidents: 1st to 14th Oct 2018 = 72

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Terror Events: *Early Oct 2018 - Wiki*

9	Bombing	2	0	Mandera, Kenya	Two teachers were killed when Al-Shabaab hurled an improvised explosive device (IED) into one of the two blocks housing non-local teachers, during a a militant raid in the Mandera County. ^[63]	Al-Shabaab	Spillover of the Somali Civil War
9	Grenade attack	1	0	Dhale, Yemen	An newly-recruited Yemeni officer was killed by a grenade attack in the southern province of al-Dhalea when unknown militants threw a grenade toward his car. ^[64]	Al-Qaeda in the Arabian Peninsula (suspected)	Yemeni Civil War
10	Bombing	1	4	Tikrit, Iraq	A civilian was killed and another four were injured when a bomb went off behind a fuel station in Iraq's Tikrit city. ^[65]	Islamic State (suspected)	Iraqi insurgency
10-13	Shooting, Kidnappings, Bombings	37 (+58)	100+	Deir ez-Zor Governorate, Syria	Over a hundred people were kidnapped from a displacement camp by the Islamic State in the Deir ez-Zor Governorate, Syria, fighting between US backed Syrian Democratic Forces (SDF) and the Islamic State between October 10 and October 13 has resulted in 37 deaths of the SDF and at least 58 of the Islamic State. ^{[66][67]}	Islamic State	Syrian Civil War
10	Mortar attack	1	10	Latakia Governorate, Syria	Militants shelled with mortars several parts of the Latakia Governorate, Syria killing a person and injuring 10. ^[68]	Militants	Syrian Civil War
10	Shooting	8 (+48)	11	Lake Chad, Chad	Eight Chad soldiers were killed and at least eleven were injured in clashes with Boko Haram jihadists in the Lake Chad region, 48 Jihadists were allegedly killed afterwards in a counter-terrorism operation by Chad Soldiers. ^{[69][70]}	Boko Haram	Boko Haram insurgency
10	Shooting	10	0	Al Anbar Governorate, Iraq	At least 10 Iraqi security forces were killed when Islamic State insurgents attacked a gas field on the western part of the Anbar Province. ^[71]	Islamic State	Iraqi insurgency

Terror Incidents: 1st to 14th Oct 2018 = 72

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



17th Nov 2015: “Islamic State is Plotting Deadly Cyber-Attacks”: *George Osborne*

Sept 2018 - £250m **Cyber-Force Unit**
To Combat **Terror** & Gang Attacks



£1.9bn Cybercrime Budget
UK National Cyber Centre
National Cyber Crime Unit

CyberEspionage: *Middle East and Africa (2)*

Desert Falcons. Victims of advanced targeted attack.

👤 Activist 🎓 Education 💰 Financial 🏛️ Government ⚙️ Industrial ⚡ Energy 📺 Media 🗳️ Political 🌐 Trade and commerce 🕌 Religious 👤 Unknown

High infection rate (1500+)

Palestine 🇵🇸 👤 🎓 💰 🏛️ ⚙️ ⚡ 📺 🗳️ 🌐 🕌 👤

Medium infection rate (500+)

Egypt 🇪🇬 👤 🎓 💰 🏛️ ⚙️ ⚡ 📺 🗳️ 🌐 🕌 👤

Israel 🇮🇱 ⚡ 💰 🏛️ ⚙️ 🗳️ 🌐 🕌 👤

Low infection rate (50+)

Jordan 🇯🇴 🏛️ ⚙️ 🗳️ 👤

United Arab Emirates 🇦🇪 🏛️ 👤

Saudi Arabia 🇸🇦 🏛️

United States of America 🇺🇸 👤

South Korea 🇰🇷 ⚙️

Russia Federation 🇷🇺 👤

Lebanon 🇱🇧 👤

Iraq 🇮🇶 👤

Canada 🇨🇦 👤

Qatar 🇶🇦 👤

Germany 🇩🇪 👤

China 🇨🇳 👤

Syria 🇸🇾 👤

Yemen 🇲🇪 👤

Algeria 🇩🇿 👤

India 🇮🇳 👤

Lowest infection rate

🇰🇼 Kuwait

🇳🇴 Norway

🇹🇷 Turkey

🇸🇪 Sweden

🇫🇷 France

🇲🇽 Mexico

🇲🇦 Morocco

🇱🇾 Libya

🇦🇱 Albania

🇷🇴 Romania

🇮🇹 Italy

🇭🇺 Hungary

🇦🇺 Australia

🇯🇵 Japan

🇿🇼 Zimbabwe

🇺🇿 Uzbekistan

🇺🇦 Ukraine

🇹🇼 Taiwan

🇸🇩 Sudan

🇵🇹 Portugal

🇲🇷 Mauritania

🇲🇱 Mali

🇮🇷 Iran

🇬🇷 Greece

🇨🇾 Cyprus

🇧🇪 Belgium

🇳🇱 Netherland

🇵🇰 Pakistan

🇩🇰 Denmark

🇸🇦 Bosnia and Herzegovina

© 2015 Kaspersky Lab

KASPERSKY

**** "Intelligent Cyber Surveillance" ****

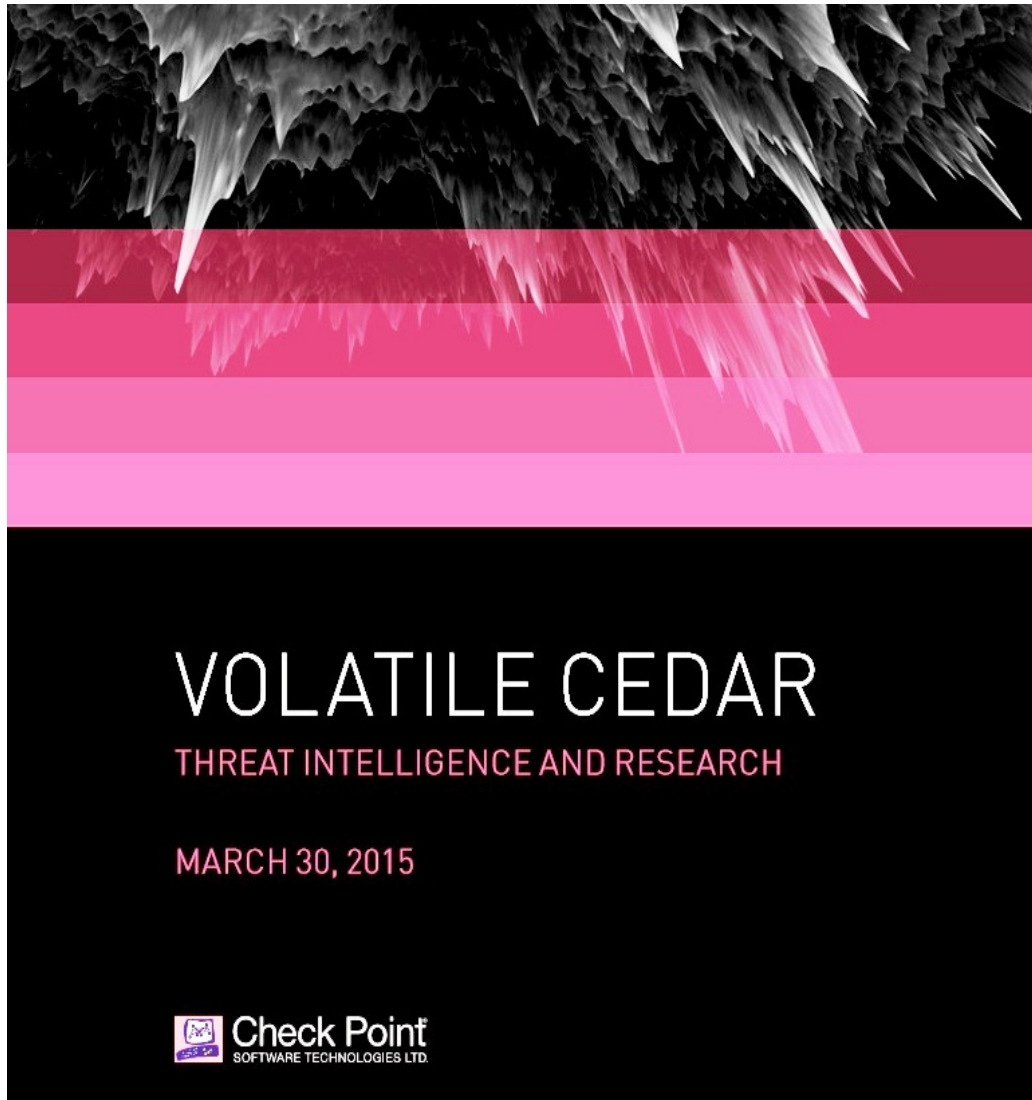
- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



CyberEspionage Group: *Volatile Cedars*



“*Volatile Cedars*” :
Cyber Espionage Group
operating from Lebanon
since 2012 with in-depth
research and full report
by Checkpoint Software
Technologies Ltd (2015)

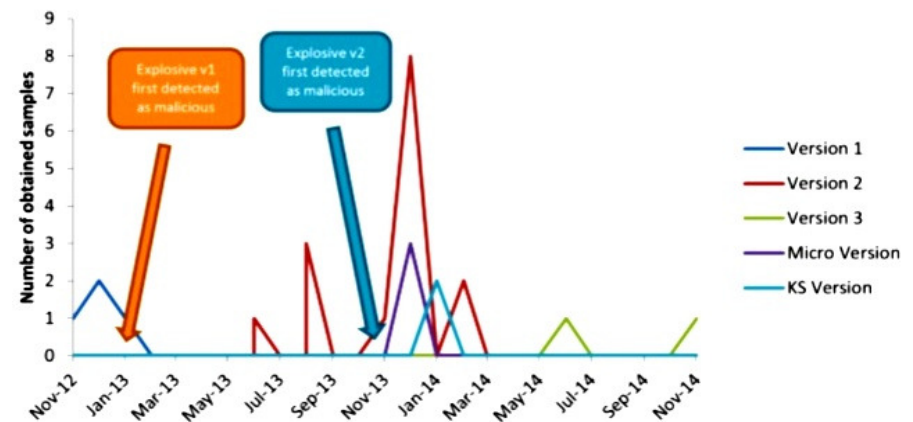


Figure 1 - Explosive version timeline

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Anonymous-Hacktivist declare *“Total War”* on ISIS after Paris Attacks – 16th Nov 2015



**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

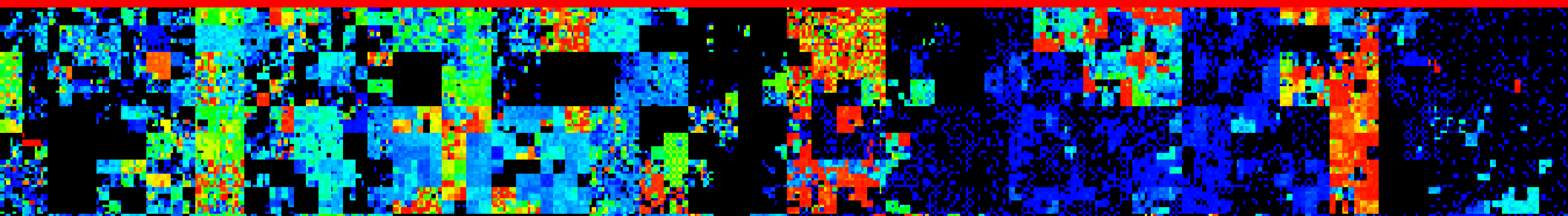
© Dr David E. Probert : www.VAZA.com ©



Intelligent **Cyber** Surveillance!...



4 – Smart City and Event Surveillance “Crowded Places”



Ship: HMT Ascanius – Devonport to Durban - 1917
38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****
- AI Video Analytics & Biometrics -
Nice, France – 5th/6th Nov 2018
© Dr David E. Probert : www.VAZA.com ©



“Real-Time” *City Video Surveillance*



Analysing and Tracking Targets requires *Intelligent Video Analytics*

Metro Surveillance: *Charing Cross, London*



“Crowded Places”: *Examples*

GOV.UK

Search



Departments Worldwide How govern
Publications Consultations Statistics

[Home](#) > [Crime, justice and law](#) > [Counter-terrorism](#)

Guidance

Crowded places guidance

Guidance on increasing the protection of crowded places from a terrorist attack.

Published 8 June 2017

From: [National Counter Terrorism Security Office](#)

Documents



Crowded Places Guidance 2017

PDF, 4.31MB, 175 pages

This file may not be suitable for users of assistive technology. [Request an accessible format.](#)

Details

The UK faces a real threat from terrorism and crowded places remain an attractive target.

Crowded places include shopping centres, sports stadia, bars, pubs and clubs which are easily accessible to the public and attractive to terrorists.

- Theatres & Concert Halls
- Transportation Hubs
- Sports Events & Stadiums
- Schools & College Campus
- Retail Shopping Malls
- Hospitals & Healthcare
- Places of Worship
- Resorts & Theme Parks

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Crowded Places Guidance

See the latest guidance for your sector. Click on your sector to begin:



NIGHT-TIME ECONOMY



CINEMAS AND THEATRES



STADIA AND ARENAS



RETAIL



HEALTH



EDUCATION



PLACES OF WORSHIP



HOTELS AND RESTAURANTS



MAJOR EVENTS



VISITOR ATTRACTIONS



COMMERCIAL CENTRES



TRANSPORT

Physical security > Evacuation, invacuation, lockdown, protected spaces 15/17

87

Planning considerations for each attack type to support an evacuation/invacuation/lockdown

Appendix C: Attack type

Click on an attack type to read the factors for consideration when planning or instigating an evacuation, invacuation to a protected space or lockdown. Actions should be reasonable, necessary and proportionate based upon the risk.



FIREARMS AND WEAPONS ATTACK



VEHICLE AS A WEAPON



PBIED



IED



VBIED - NON PEN



VBIED - PENETRATIVE



BOMB THREAT



CBRN



UVIED



POSTAL IED

© NaCTSO Crown copyright 2017

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Smart Analysis Tools: 3D Simulation Modelling ***for "Security Crisis" & "Disaster Management"***



**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



“Crowded Places”: **Security Defences**

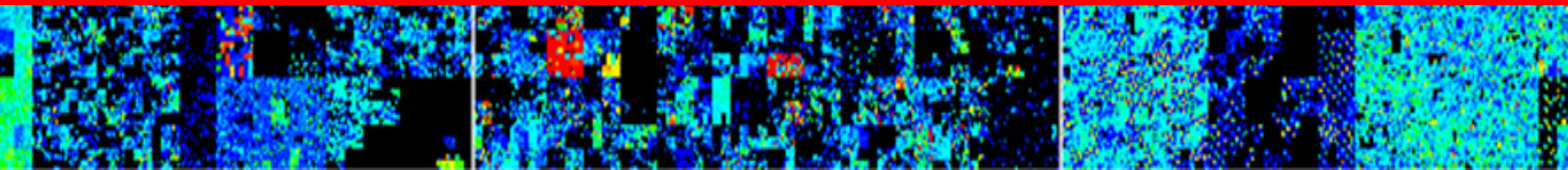
- “Intelligent” Perimeter Fencing (Fibre/Sensors)
- Secure Access Doors & Gates
- CCTV Surveillance & Video Analytics
- Scanning Devices for Malicious Assets - CBRN
- Biometric Technologies & Face ID
- Real-Time Command & Control Centre
- Converged Dashboard: Physical & Cyber Feeds

***....Effective **\$ecurity** for “Crowded Places” requires
\$\$\$ Investment in **\$ecurity \$kills & \$olutions!....*****

Intelligent **Cyber** Surveillance!...



5 – Advanced Cyber Analysis Tools “AI Video Analytics”



“Cyber” Tracking & Profiling: “Bad Guys”

- Mitigating Global Crime & Terrorism requires us to **Profile & Track** the “Bad Guys” in “Real-Time” with Intelligent Networked Computing Systems:
 - **3D AI Video Analytics** from CCTV Facial Profiles
 - Track On-Line **Social Media**, eMail & “Cell” Comms
 - Scan “**DarkNet**” for “Business Deals”, Plans & Messages
 - Check, Track & Locate **Mobile** Communications
 - Track “Bad Guys” in National **Transport Hubs**
 - Deploy **RFID Devices** to Track High-Value & Strategic “Assets”
 - Use **Real-Time ANPR** for Target Vehicle Tracking

...**Cyber Computing Smart Apps** can now Track Massive Databases of Target “Bad Guy” Profiles **@ Light Speed!...**

**** “Intelligent Cyber Surveillance” ****

- **AI Video Analytics & Biometrics** -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



“Cyber” Tracking & Profiling: “Bad Guys”

- Mitigating Global Crime & Terrorism requires us to **Profile & Track** the “Bad Guys” in “Real-Time” with Intelligent Networked Computing Systems:



...**Cyber Computing Smart Apps** can now Track Massive Databases of Target “Bad Guy” Profiles **@ Light Speed!...**

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



SENSETIME: AI Cyber-Bio Surveillance



SENSETIME: AI Biometric Video Analytics - "Chinese Unicorn"
 商 汤 科 技 www.sensetime.com

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****
 - AI Video Analytics & Biometrics -
 Nice, France - 5th/6th Nov 2018
 © Dr David E. Probert : www.VAZA.com ©



SENSETIME: AI Cyber-Bio Surveillance



SENSETIME: AI Biometric Video Analytics - "Chinese Unicorn"
商 汤 科 技 www.sensetime.com

38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France - 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



On-Line 3D Hi-Resolution **Aerial Surveillance**



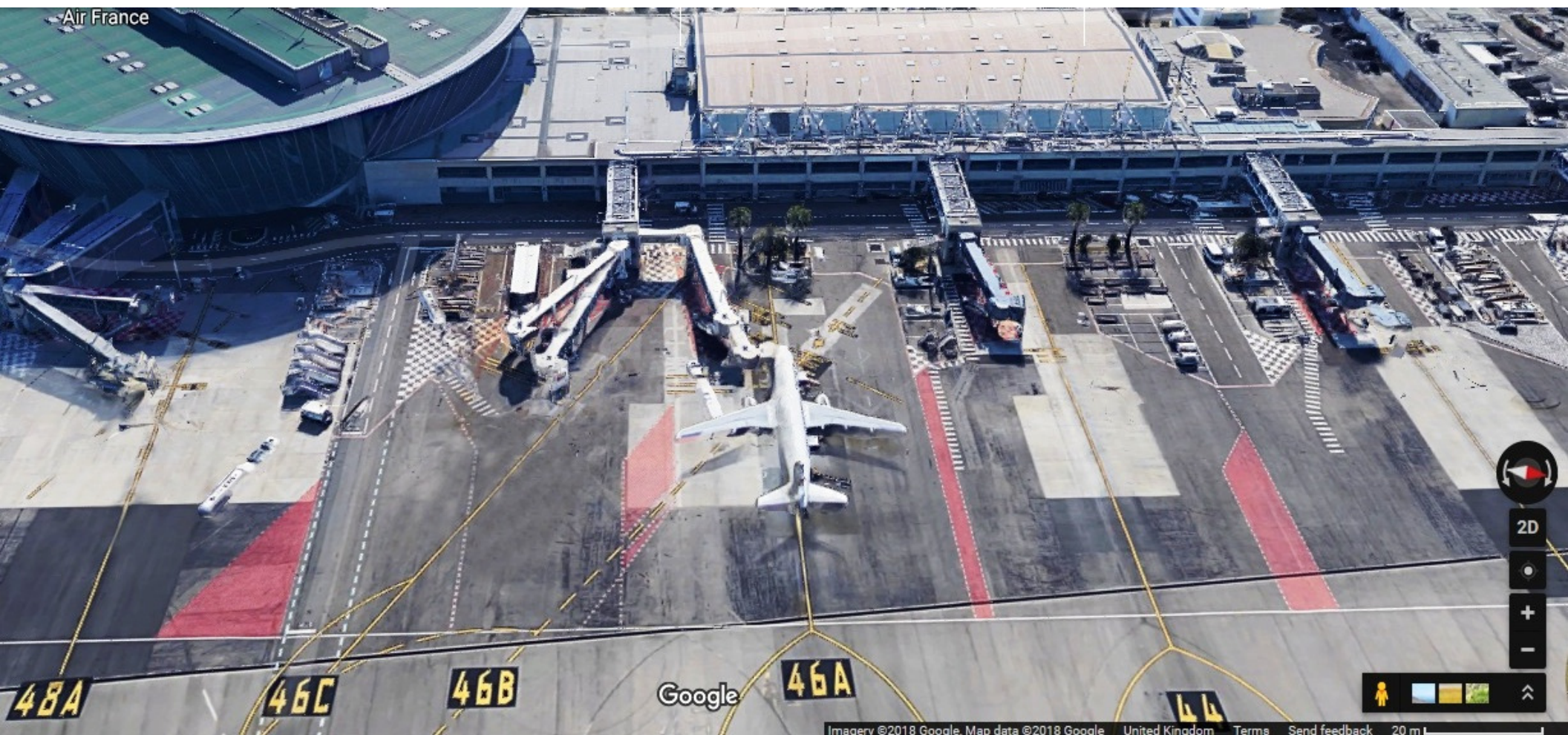
“Google Maps” - 3D Aerial & Satellite Images - Nice Airport, France

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****
- AI Video Analytics & Biometrics -
Nice, France – 5th/6th Nov 2018
© Dr David E. Probert : www.VAZA.com ©



On-Line 3D Hi-Resolution **Aerial Surveillance**



“Google Maps” - 3D Aerial & Satellite Images - Nice Airport, France

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****
- AI Video Analytics & Biometrics -
Nice, France – 5th/6th Nov 2018
© Dr David E. Probert : www.VAZA.com ©



On-Line 3D Hi-Resolution **Aerial Surveillance**



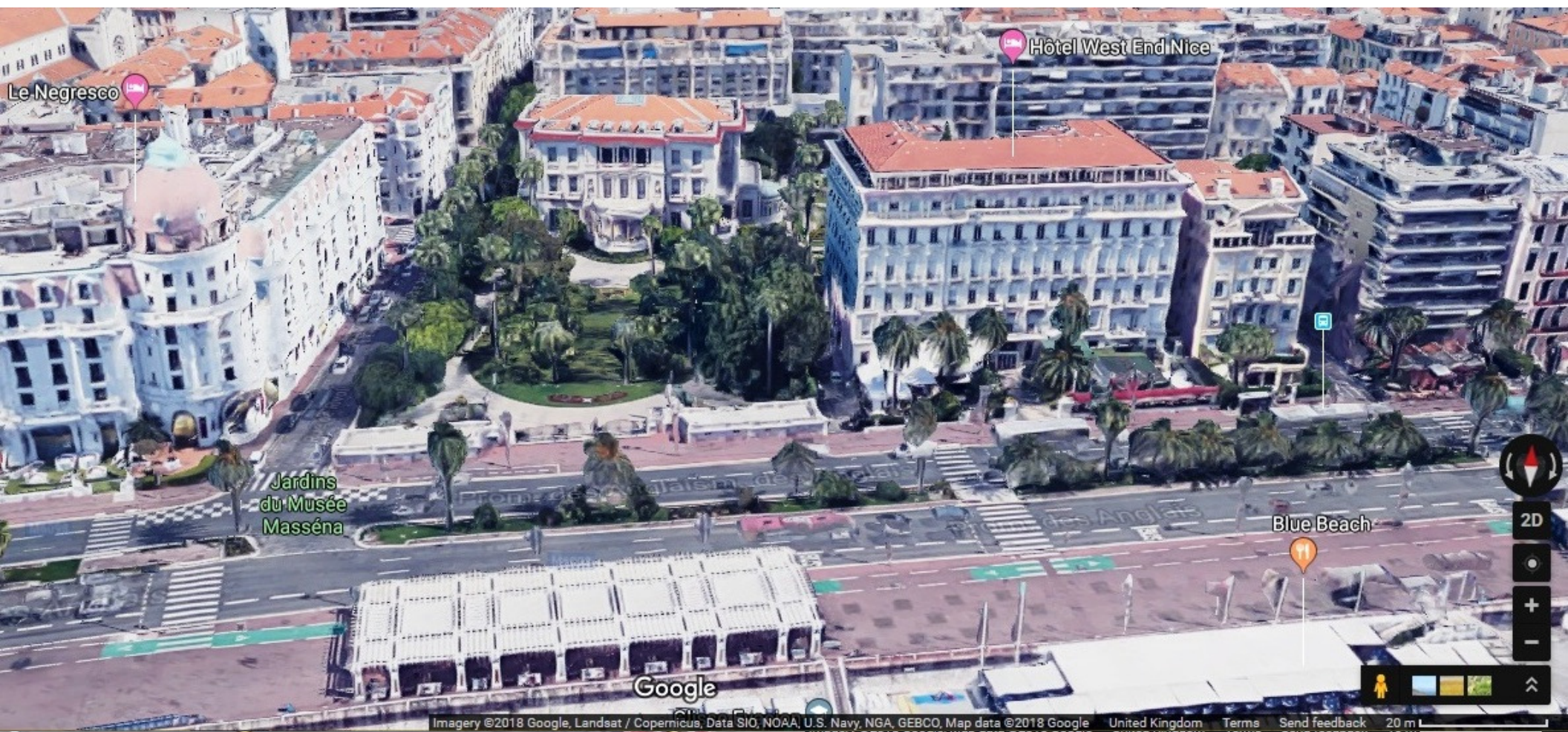
“Google Maps” - 3D Aerial & Satellite Images - Nice Airport, France

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****
- AI Video Analytics & Biometrics -
Nice, France – 5th/6th Nov 2018
© Dr David E. Probert : www.VAZA.com ©



On-Line 3D Hi-Resolution **Aerial Surveillance**



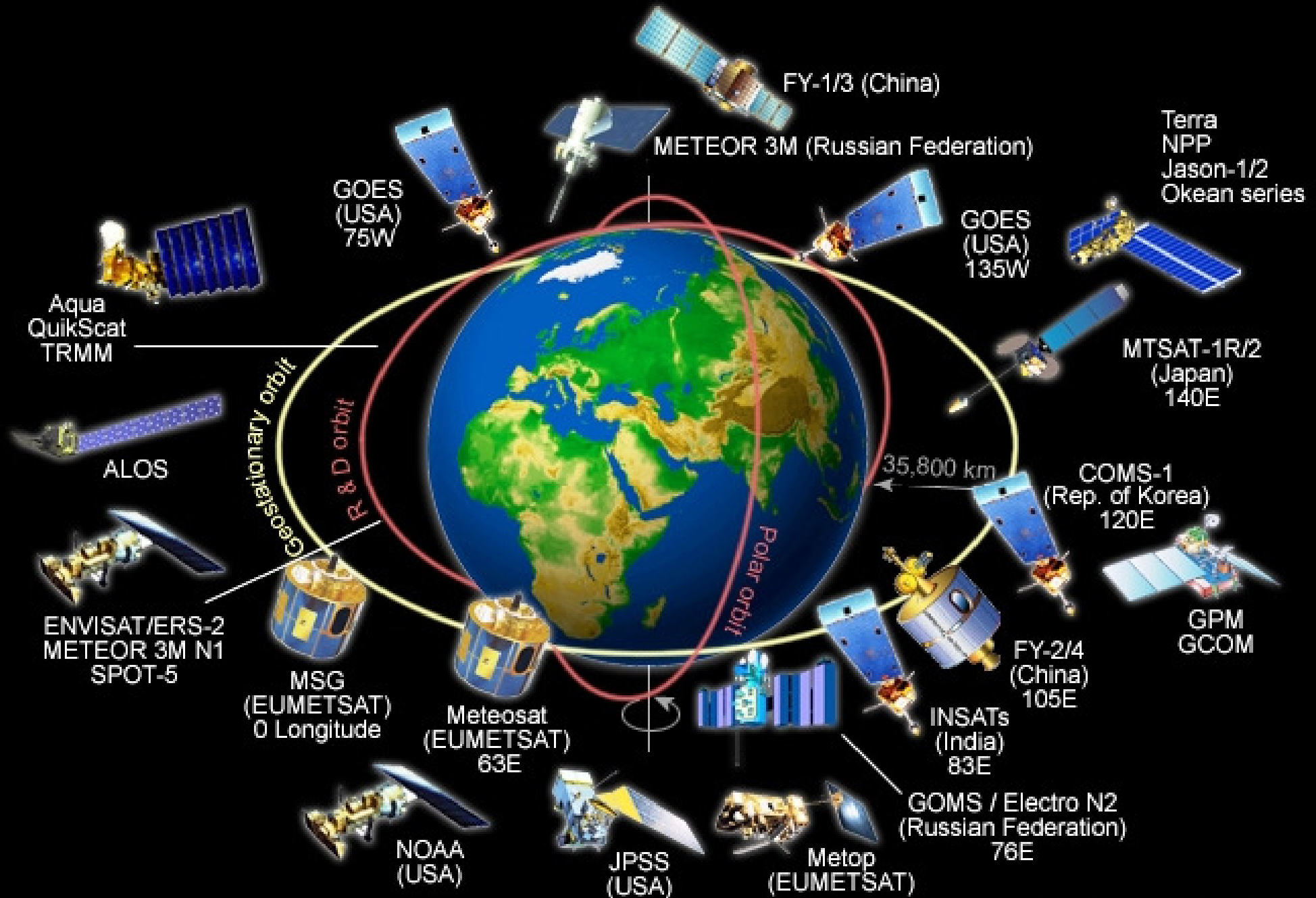
“Google Maps” - 3D Aerial & Satellite Images - West End Hotel, Nice

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****
- AI Video Analytics & Biometrics -
Nice, France – 5th/6th Nov 2018
© Dr David E. Probert : www.VAZA.com ©



The Global Satellite Observation System



**** "Intelligent Cyber Surveillance" ****

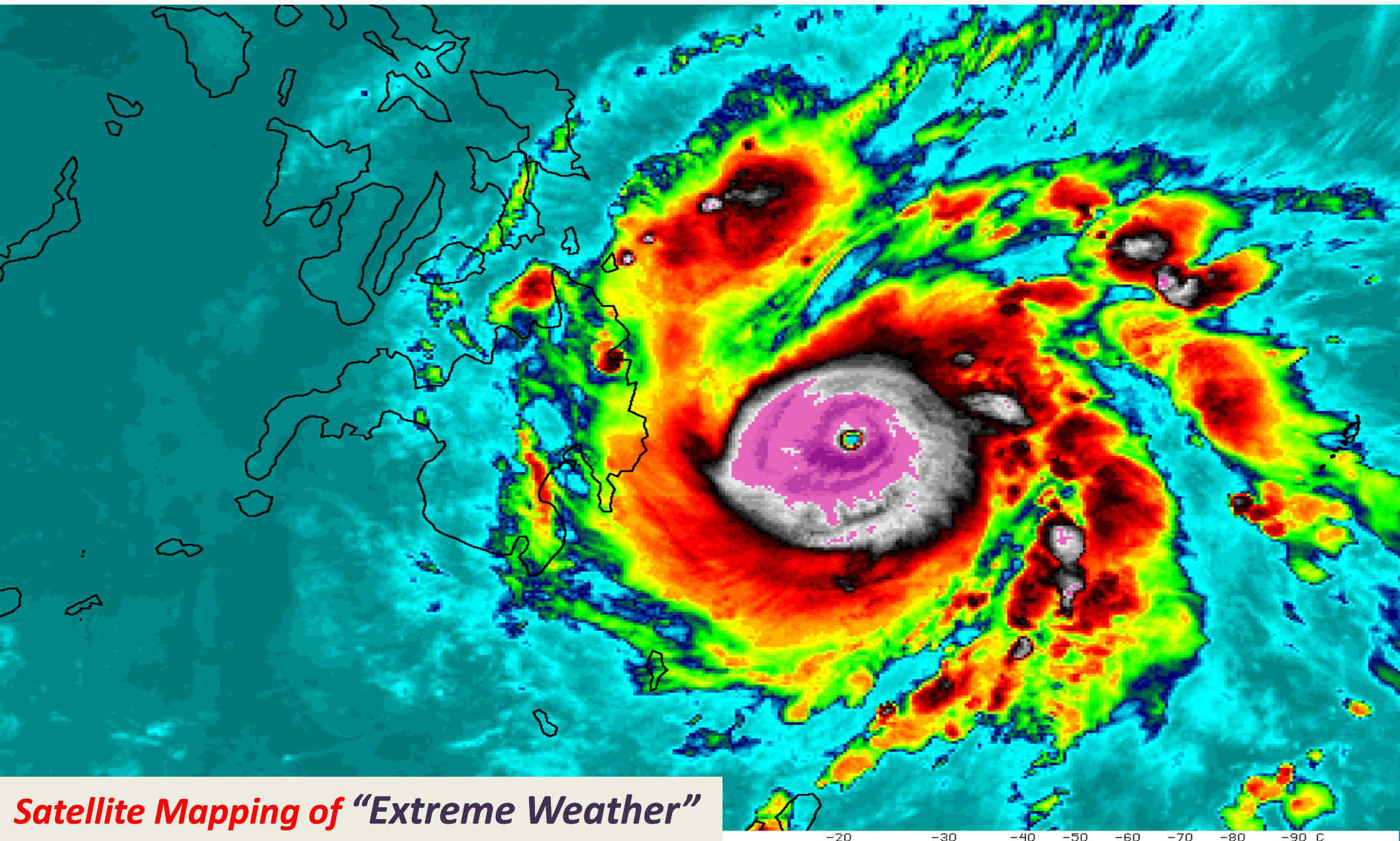
- AI Video Analytics & Biometrics -

Nice, France - 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



“Real-Time” Meteorological Analysis



Satellite Mapping of “Extreme Weather”

MTSAT-1R - IR 10.8 MICROMETERS (CHANNEL 02) - 10:57 UTC 03 DECEMBER 2012 - CIMSS / SSEC / UNIVERSITY OF WISCONSIN - MADISON

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France - 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Counter Terrorism & Cyber Security: *Newton Lee*

Total Information Awareness

5 Artificial Intelligence and Data Mining

5.1 Artificial Intelligence: From Hollywood to the Real World.

5.2 Intelligent CCTV Cameras.

5.3 Data Mining in the Age of Big Data

5.4 Knowledge Representation, Acquisition, and Inference

5.5 Dynamic Mental Models

5.6 Modeling Human Problem Solving

5.7 Structural Topology and Behavioral Causality

5.8 Component Clustering and Decoupling.

5.9 Analytical Models and Experiential Knowledge

5.10 The DM² Algorithm

5.11 AI Applications in Counterterrorism

5.12 Massively Multi-Participant Intelligence Amplification

References

Part III Counterterrorism Technologies: Social Media and Cybersecurity

6 Social Media and Two-Way Street of Total Information Awareness . . .

6.1 It's a Small World, with CCTVs

6.2 Facebook Nation: Total Information Awareness

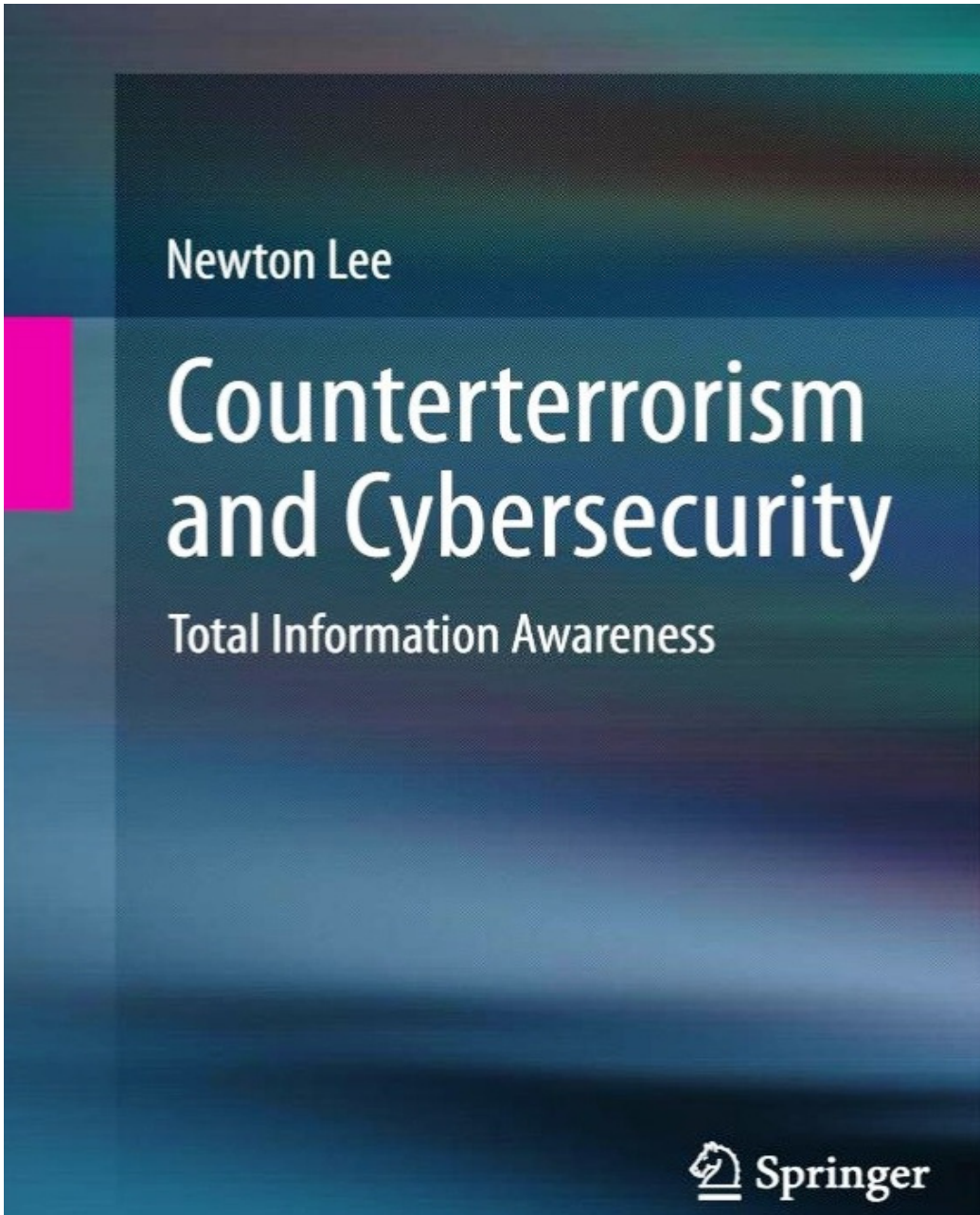
6.3 Surveillance Satellites, Tracking Devices, Spy Malware, and Drones

6.4 Two-Way Street of Total Information Awareness

6.5 No Doomsday for the Internet

6.6 Web 2.0 for Intelligence Community: Intellipedia, A-Space, Deepnet.

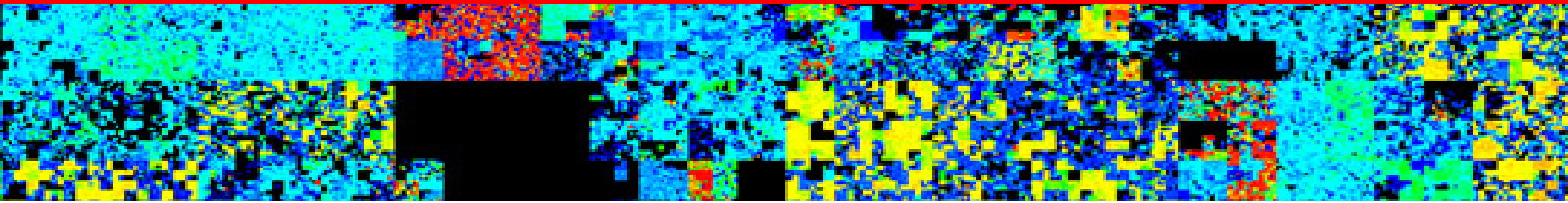
References



Intelligent **Cyber** Surveillance!...

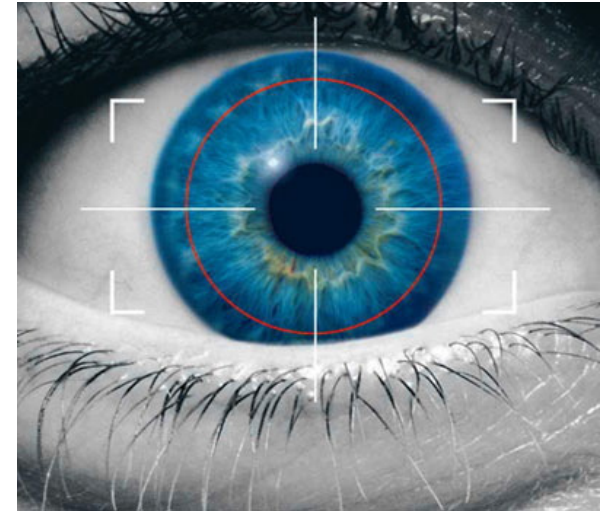


6 – Biometric & Behaviour Profiles “Cyber Biometrics”



Biometrics & RFID Security Applications

- **Biometrics** techniques may include:
 - Finger and Palm Prints
 - Retinal and Iris Scans
 - 3D Vein ID
 - Voice Scans & Recognition
 - DNA Database – Criminal Records
 - 3D Facial Recognition



- **RFID** = Radio Frequency ID with applications that include:
 - Personal ID Cards for Building, Secure Facility Access
 - Tags for Retail Articles as a Deterrence to Shoplifting
 - Powered RFID Tags for Vehicles to open Doors, Barriers & Switch Lights
 - Plans to use RFID Tags for Perishable Products such as Fruit & Vegetables
 - Asset Tags to manage the movement of High-Value & Strategic Assets
 - Potential for Embedded Intelligent RFID Devices into Humans

Integrated *Cyber Biometrics*: *Pre-Attack*

- *Intelligent Biometrics Tools* can significantly reduce **YOUR** Risks of Cyber Threats & Attacks...



- **Device & Access Authentication** by Fingerprints, Retinal/Iris Scan or Palm Vein Scan
- **Facility Access** with “Live” 3D Facial Recognition
- “**Behavioural Biometrics**” for Secure User Authentication
- **City/Campus** Regional Tracking with Intelligent 4K Networked CCTV & Real-Time *Self-Learning* Video Analytics
- “Live” **CBRN** Scanning for Hazardous materials – (**C**hemical, **B**iological, **R**adiological, **N**uclear)

...It is crucial that *Cyber Biometrics Tools* are Integrated with the CSO-led *Business Security Operations*



**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Typical **Cyber-Biometric** Solutions



FINGERPRINTS

- 5-9 Second Processing Time
- Commonly Used in Border Management
- Also Used in Law Enforcement



FACIAL RECOGNITION

- Non-invasive Collection
- Currently Used for Passports and National ID Documents



IRIS

- Low False Acceptance Rates
- Difficult to Replicate
- Two Second Processing Time



DNA

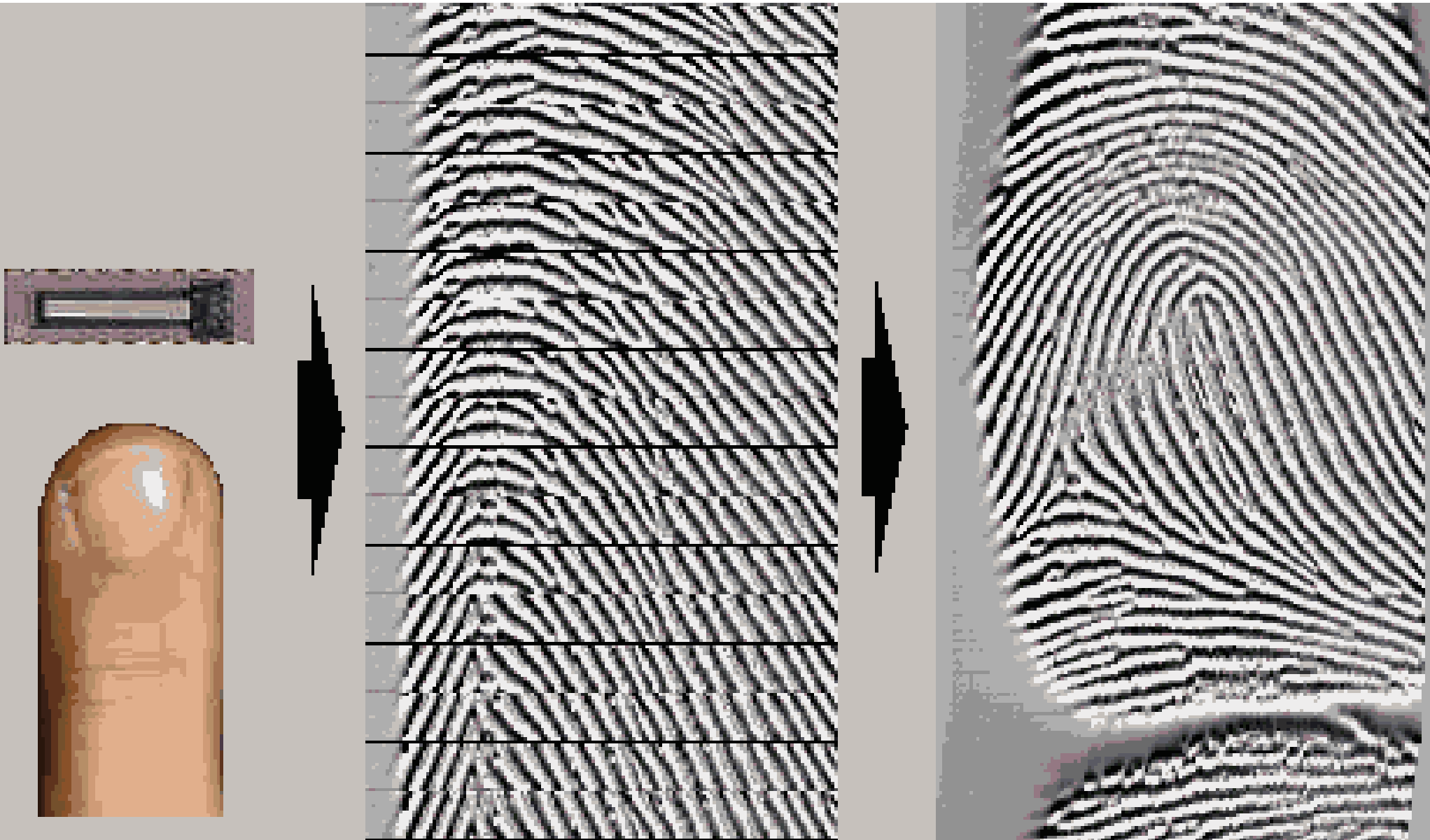
- Establishes Familial Relationship
- Commonly Used in Law Enforcement
- Highly Unique/Impossible to Replicate



Cyber-Biometrics: *Fingerprint Solutions*



Linear Biometric *Finger Print Scanner*





Plain Arch



Tented Arch



Ulnar Loop



Radial Loop



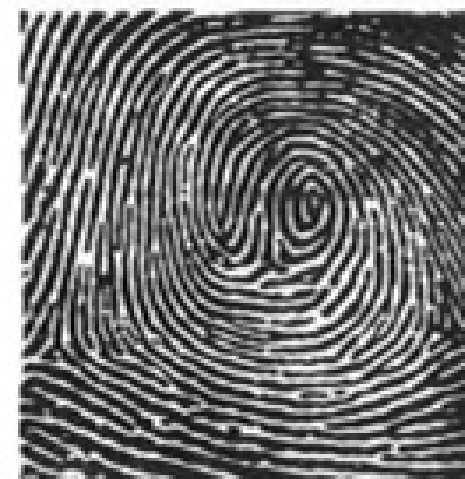
Double Loop Whorl



Plain Whorl



**Central Pocket
Loop Whorl**



Accidental Whorl

Characteristic *Fingerprint* Patterns

**** "Intelligent Cyber Surveillance" ****

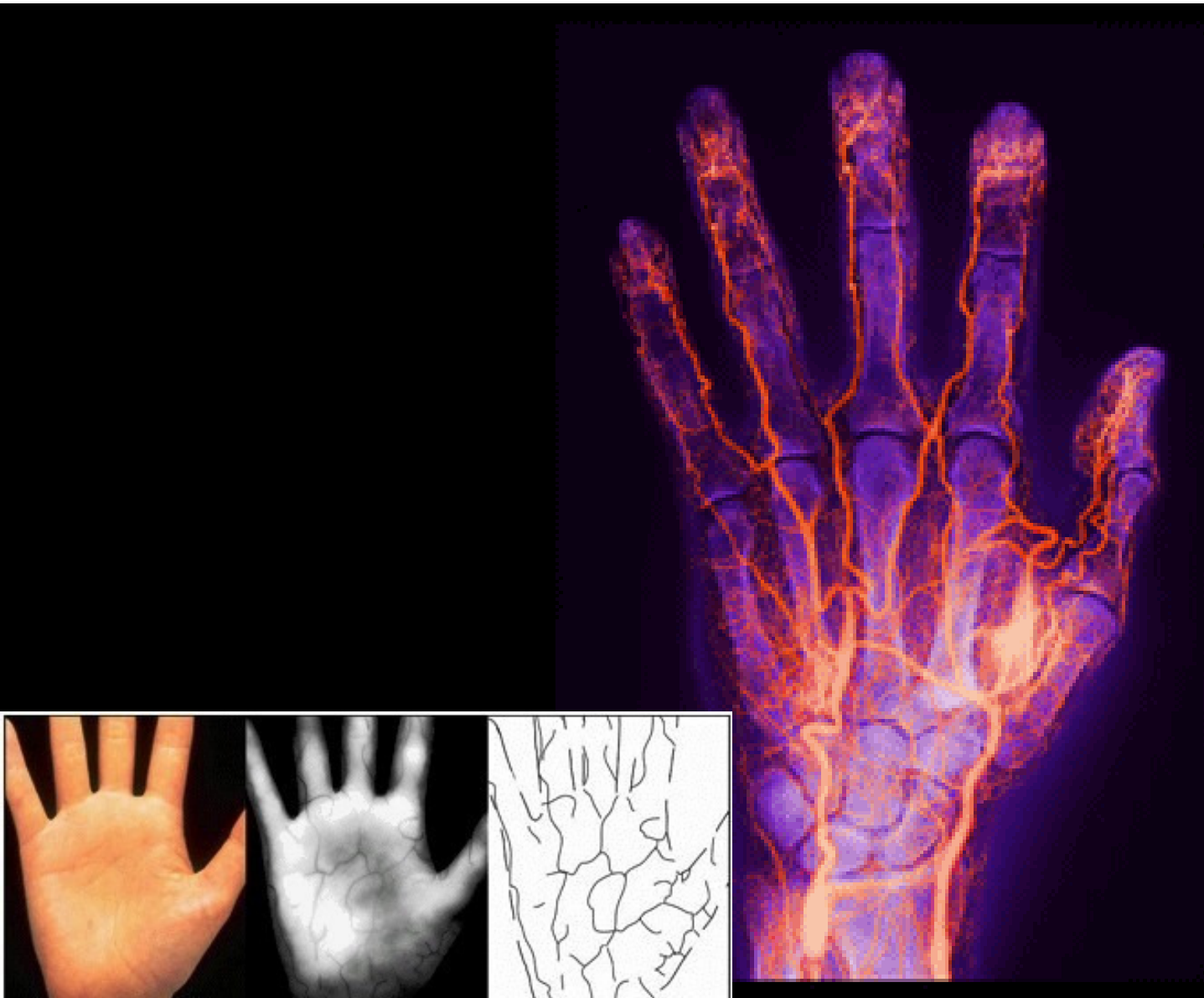
- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

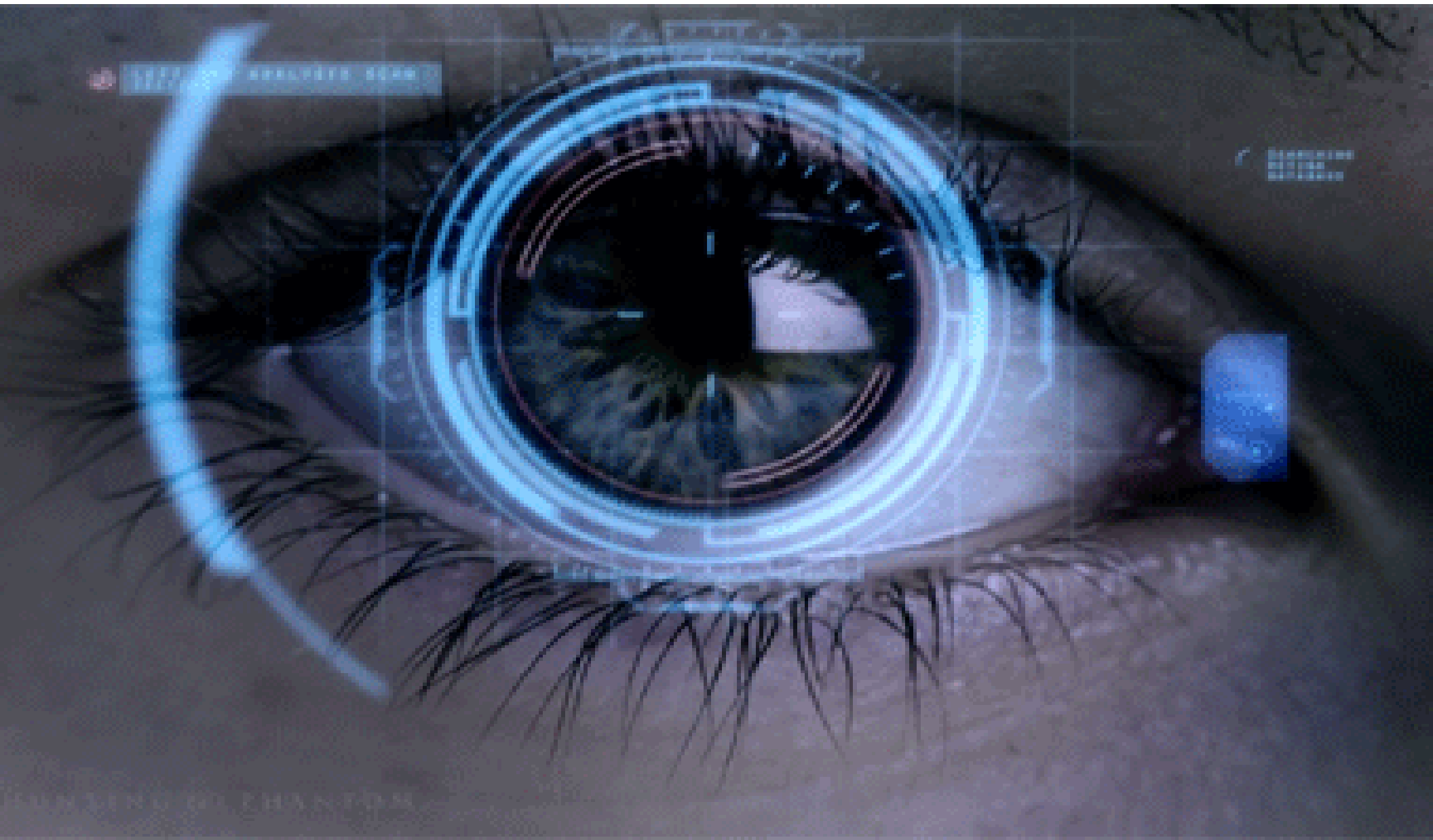
© Dr David E. Probert : www.VAZA.com ©



Cyber-Biometrics: *“Live” Vein Analytics*



Cyber-Biometrics: *Retinal & Iris Scans*

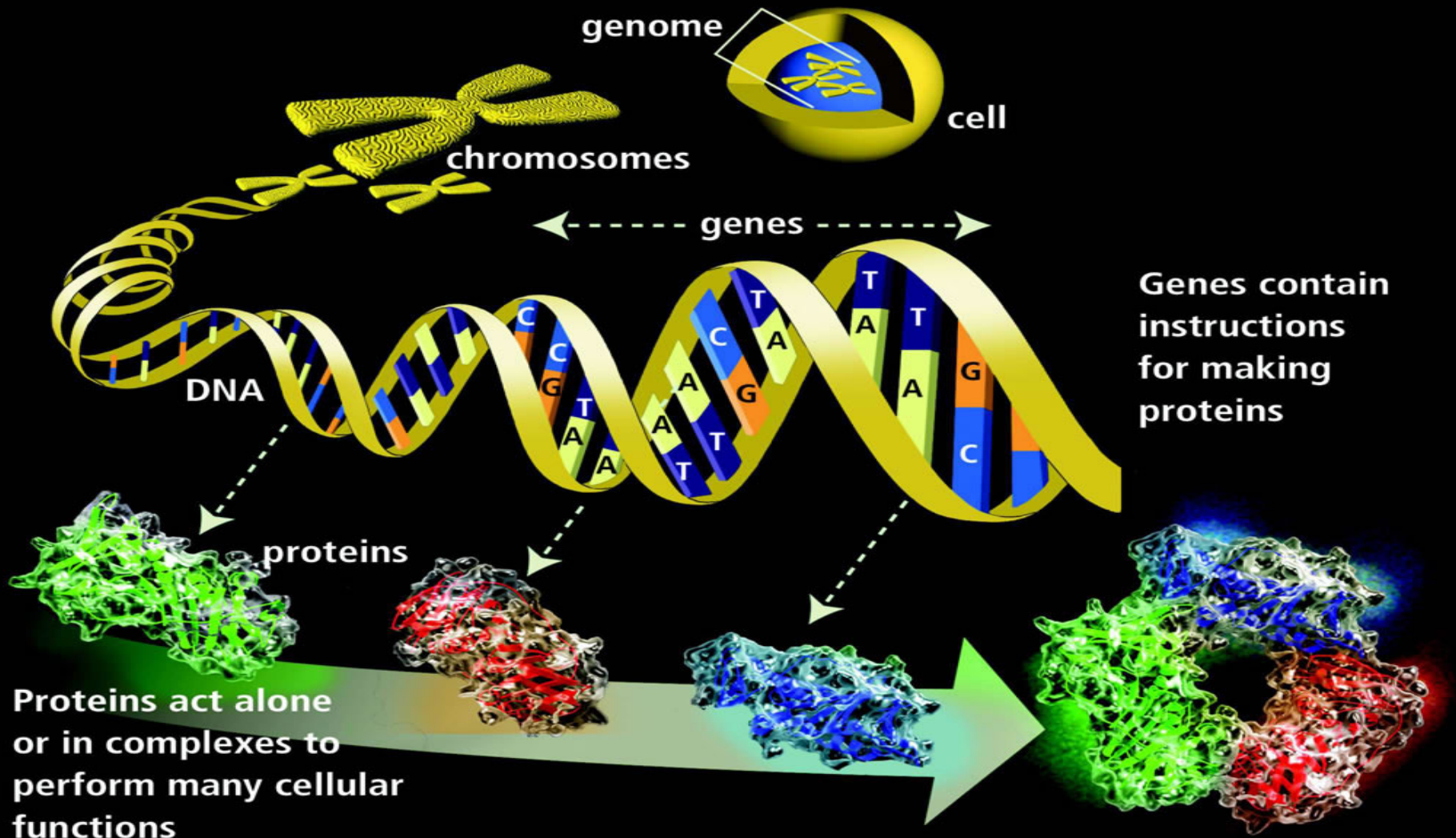


Biometric ID Authentication: “IoT”

- Biometric Security provides Crucial Cyber-Defence for the “Internet of Things” – “IoT”:
 - Bio-ID & Authentication for ALL Secure “IoT” Devices
 - Real-Time Bio Profiling & Behavioural Modelling
 - Rapid Intrusion Alerts for “IoT” Networks & Assets
 - Bio ID Access for Secure Cloud Data & Apps
 - Mobile “IoT” Asset Tracking with Bio ID Security

...ALL Secure “IoT” Devices should be Biometric Protected to *Mitigate ID Theft and Fraud!...*

Forensics: *Fast DNA Finger Printing*



U.S. DEPARTMENT OF ENERGY

**** "Intelligent Cyber Surveillance" ****

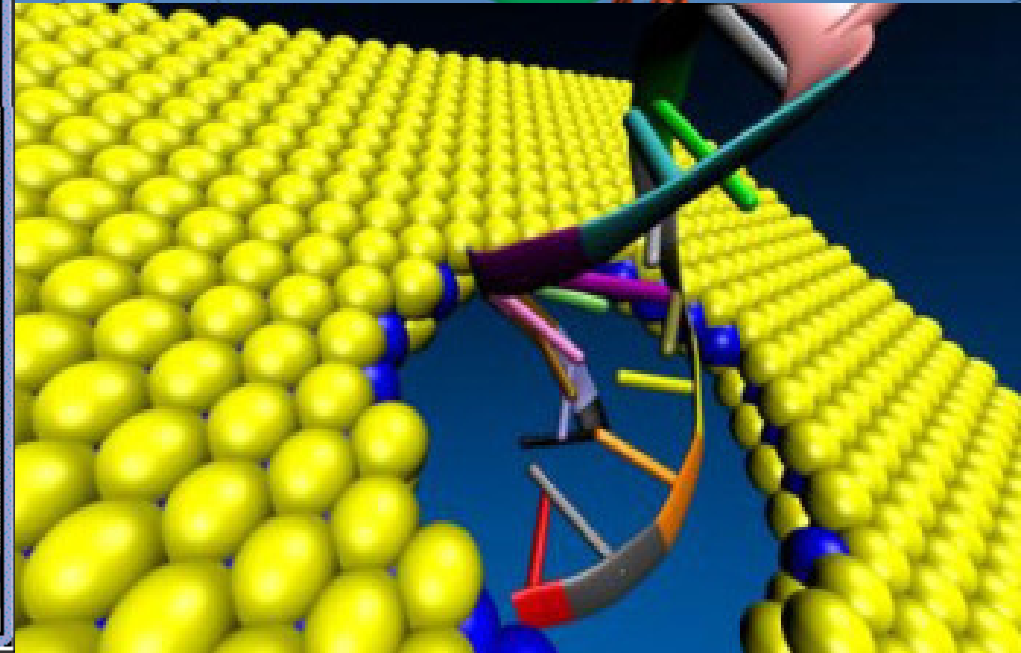
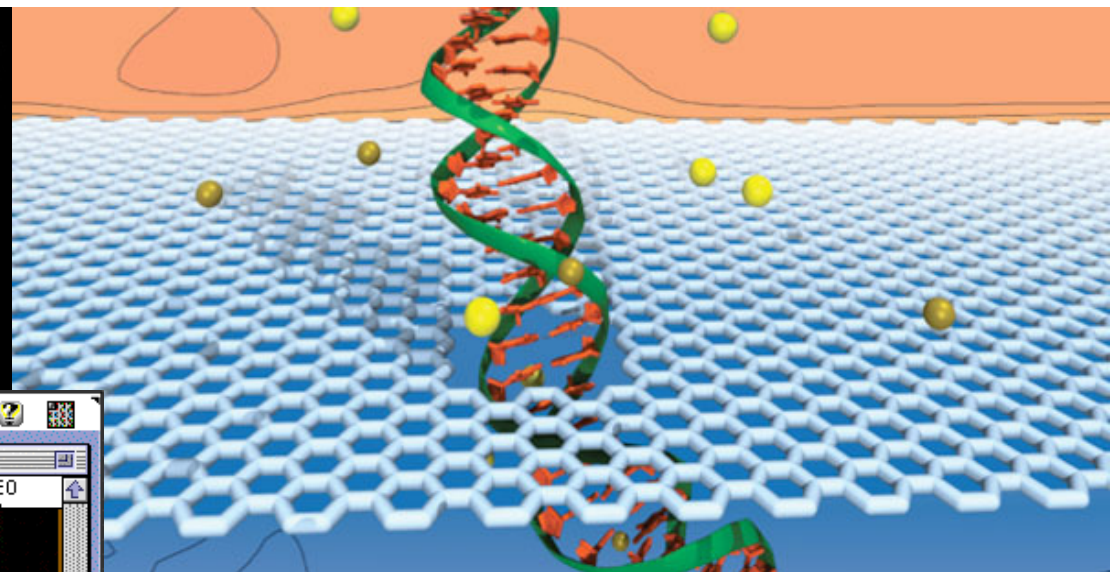
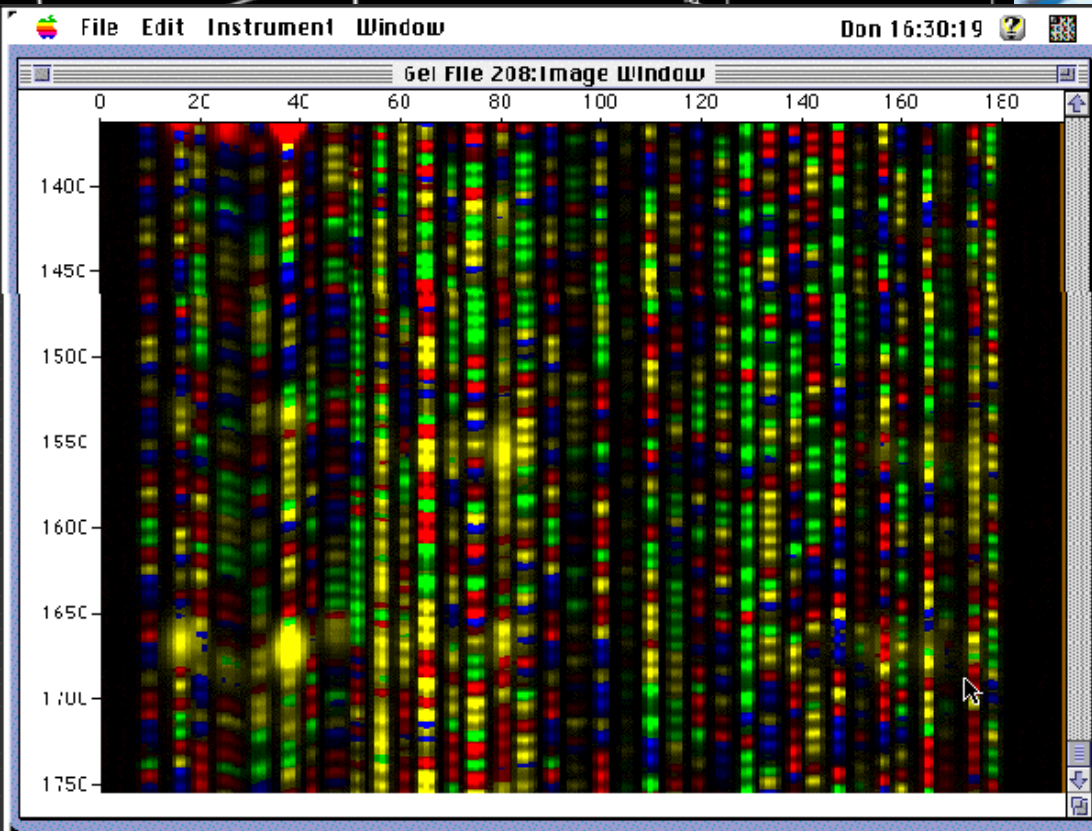
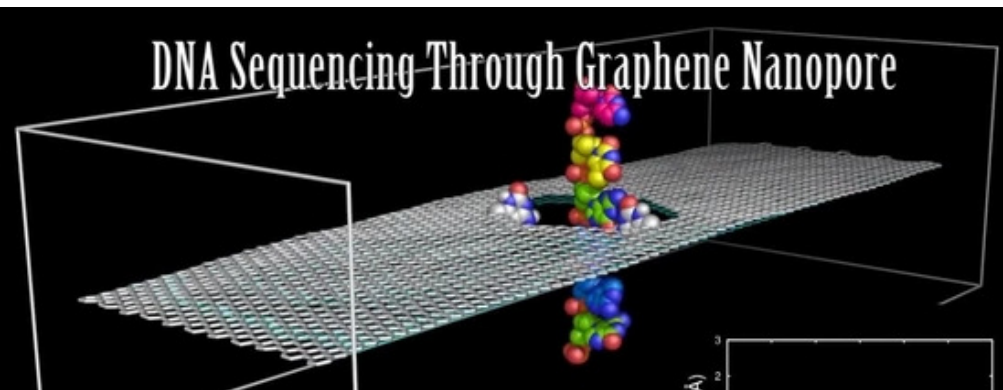
- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Fast DNA Sequencing: *Graphene Nanopore*



**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Biometrics & Forensics: Glasgow University



Cyber Security and Networks

Case Study: Biometrics and forensics for new security solutions

Research commissioned by the Government's Department for Business, Innovation and Skills (BIS), revealed that the number of cyber attacks hitting businesses has increased over the last year, with some attacks causing more than £1 million of damage. 87% of small firms experienced a cyber-security breach last year, an increase of 10%.

GCU's Interactive and Trustworthy Technologies Research Group, based within the Institute for Sustainable Engineering and Technology Research, pools expertise in computing technology and policy in industry, government, and academia; human computer interaction with research interests including novel touch based interfaces, interactive information retrieval and intelligent user interfaces; digital security and forensics; the development of technological solutions to support students; and computer security.

GCU's Dr Michelle Govan has research interests in biometrics, digital security and digital forensics techniques. Working with colleagues

Dr Mike Just and Professor Lynne Baillie, she has researched a range of trustworthy security technologies, applicable to a wider range of markets, including authentication technologies and finding solutions that balance security, usability and efficiency, addressing the common weakest links, individual passwords and the limitations of people.

The research group has a wealth of expertise in working with industry and research partners. Projects on methods of biometric authentication have included a Knowledge Transfer Partnership (KTP) project and subsequent research fellowship with smartcard technology company Eccebs Ltd. The project involved the development of multimodal biometric algorithms for authentication within embedded systems, and used control theory to develop novel feedback and feed forward approaches for fingerprint authentication.



The work resulted in patented technology on smartcard devices that was used to enter new markets with a competitive advantage. Eccebs saw increased turnover of £530k per annum, and eventual acquisition by Trainline Investment Holdings Ltd and subsequently Bell ID. The research proposed identifying the key components of a fingerprint, the "minutiae", by their relative spatial relationships, rather than the normal practice of using global position coordinates and orientation.

These advanced biometrics authentication processes and algorithms for embedded systems led to the development of new security solutions to offer increased protection of smartcard data. The research also extended biometrics beyond traditional authentication, and utilised biometric characteristics as a gauge for physical state. In particular, research improved the efficiency of data processing,

lessening the impact on smartcard users and enabled Eccebs Ltd to develop an advanced multi-modal biometric based security solution.

The authentication research of the Interactive and Trustworthy Technologies research group has included the development of underlying technologies for biometrics on smartcards, multimodal sensors on smartphones, and online knowledge-based information. In each case, the intended goals related to improved security, usability, and effectiveness for cost reduction and increased market potential. Research also includes models of authentication for online banking, which is being used to develop new solutions for making effective choices as to which forms of authentication should be used, and which parameters should be selected in order to support better informed choices of security protection.

Interactive and Trustworthy Technologies Research Group

Dr Govan also leads GCU's involvement in the Cyber Security Challenge competition, run by GCHQ, the UK Government Communications Headquarters, to test the UK public's potential for a career in cyber security. GCU hosted one of the Challenge's 2013 cyber camps, offering candidates hands on learning experience and unique insights into what it's like to work in the cyber security industry, with Scottish Police and BlackBerry.



At Glasgow Caledonian University, we work with industry and public sector partners to ensure our expertise responds to the need for real world innovation. GCU's strategic business development and knowledge transfer teams work with academic experts in our Schools and Research Institutes to support businesses with a problem-solving approach.

Contact us to find out more about building a brighter future with GCU at www.gcu.ac.uk/business.



Further information:
Dr Michelle Govan
School of Engineering and Built Environment
Glasgow Caledonian University

michelle.govan@gu.ac.uk
0141 331 8192
www.gcu.ac.uk/isetr

Glasgow Caledonian University is a registered Scottish charity, number SC032474. © Glasgow Caledonian University 2013

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Private Detective: “*Sherlock Holmes*”!



“Forensics Pioneer”

- a) Detective Work
- b) Fingerprints
- c) Ciphers & Codes
- d) Footprints
- e) Handwriting

Author: **Sir Arthur Conan Doyle**: 1859 - 1930

38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



(5) **Cyber Digital Forensics: Post-Attack**

- Evidence from Cyber Digital Forensics can help to identify the Criminals, Terrorists and Cyber Attackers:
- **Physical Forensics:**
 - Blood & Tissue Samples
 - DNA & Genetic Analysis
 - Chemical Agents, GSR, Fibres
- **Cyber Forensics:**
 - Cyber Attack IP Address/DNS/Proxies
 - Malware/Trojan/Virus Analysis
 - Botnet/DDOS , Targets & Payload
 - RansomWare/Encryption & Attack “Signatures”

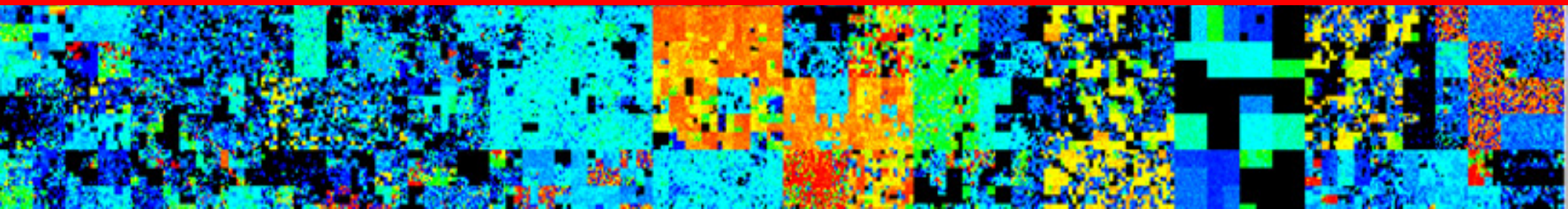
...Evidence from BOTH **Cyber & Physical Forensics** will be relevant to 21stC Terror Threats & Attacks!...

Intelligent **Cyber** Surveillance!...



7 – Transport, Retail, Culture, Defence...

“Sector Surveillance”

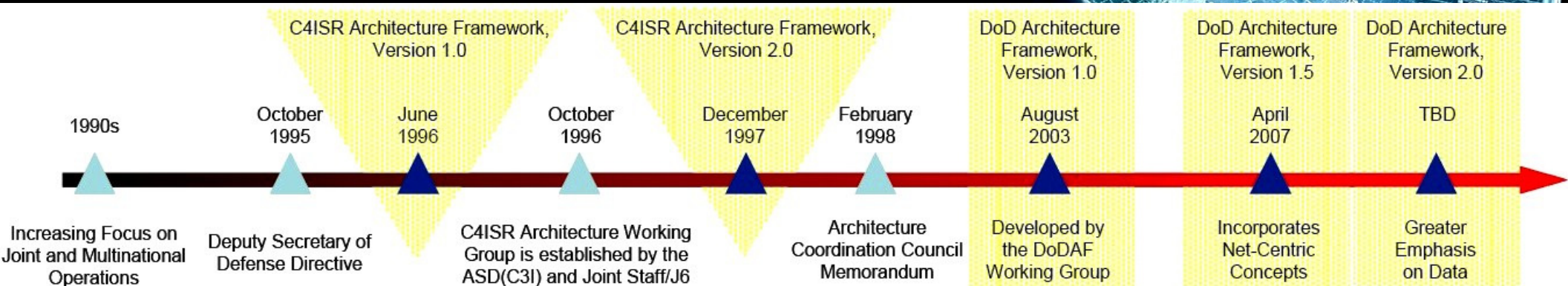


Cyber-Bio: Integrated *Security Scenarios*

- **Banks/Finance:** eFraud, DDOS, Insider Threats
- **Government/Parliament:** “Fake IDs” & File Theft
- **Defence/Military:** Cyber-Espionage & Attacks
- **Travel/Tourism:** Beach Resorts & Travel Hubs
- **Culture/Sports:** Major Events & Competitions
- **Energy/Utilities:** Nuclear Theft, Explosions
- **Retail/Malls/Campus:** Armed Attacks & Siege
- **Healthcare/Pharma:** “Fake Drugs & Records”

...ALL Generic ***Cyber-Bio Threats*** apply to ALL
Our Business Sectors & Critical Infrastructure!

Defence Sector - C4ISR: Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance.....



C4ISR: Integrated Real-Time Defence Architecture
38th International East-West Security Conference

**** "Intelligent Cyber Surveillance" ****
- AI Video Analytics & Biometrics -
Nice, France – 5th/6th Nov 2018
© Dr David E. Probert : www.VAZA.com ©



Defence Sector: DOD Cyber Guidelines



Seven Steps to Effectively Defend Industrial Control Systems



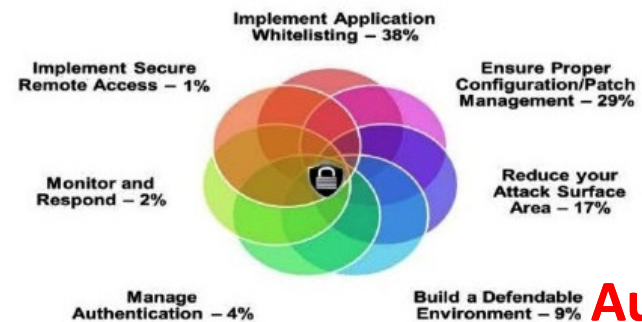
ACKNOWLEDGEMENT

This document "Seven Steps to Effectively Defend Industrial Control Systems" was written in collaboration, with contributions from Subject Matter Experts working at the Department of Homeland Security (DHS), the Federal Bureau of Investigation (FBI), and the National Security Agency (NSA).

INTRODUCTION

Cyber intrusions into US Critical Infrastructure systems are happening with increased frequency. For many industrial control systems (ICSs), it's not a matter of *if* an intrusion will take place, but *when*. In Fiscal Year (FY) 2015, 295 incidents were reported to ICS-CERT, and many more went unreported or undetected. The capabilities of our adversaries have been demonstrated and cyber incidents are increasing in frequency and complexity. Simply building a network with a hardened perimeter is no longer adequate. Securing ICSs against the modern threat requires well-planned and well-implemented strategies that will provide network defense teams a chance to quickly and effectively detect, counter, and expel an adversary. This paper presents seven strategies that can be implemented today to counter common exploitable weaknesses in "as-built" control systems.

Seven Strategies to Defend ICSs



Aug 2018

**** "Intelligent Cyber Surveillance" ****

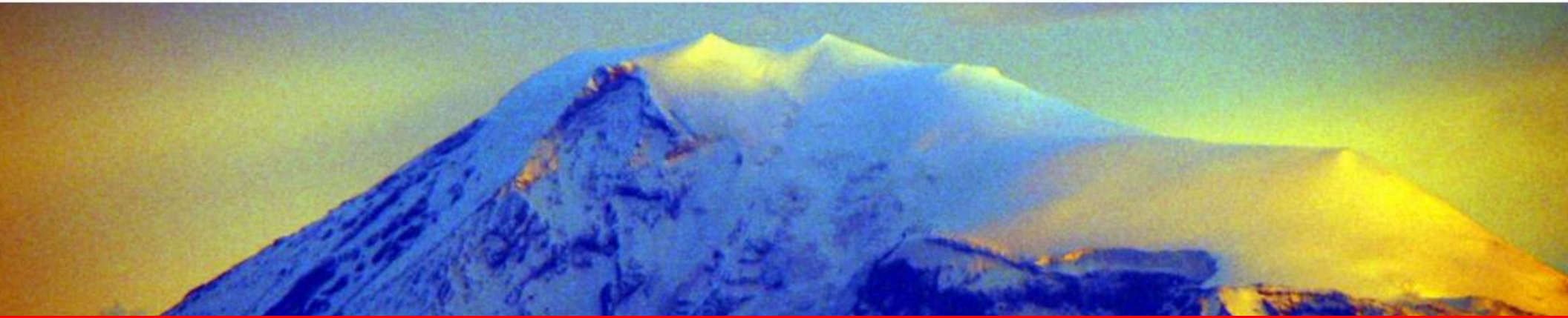
- AI Video Analytics & Biometrics -

Nice, France - 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©

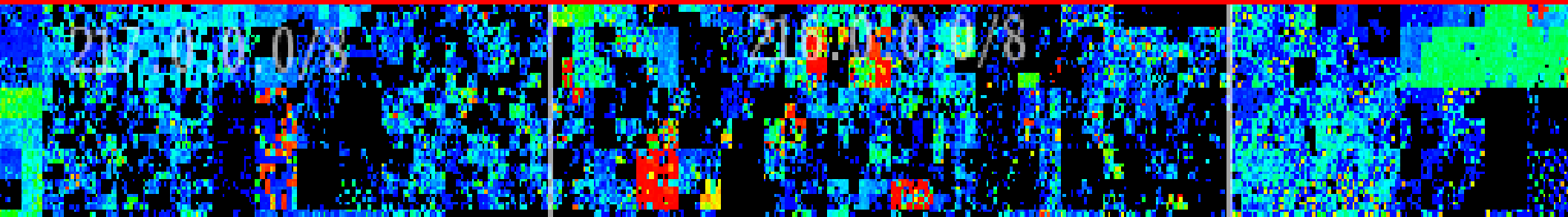


Intelligent **Cyber** Surveillance!...



8 – **Cyber Surveillance Visions!...**

“**Cyber 2025** Futures”



“Smart Glass”: Augmented Reality

- Meta Vision AR HeadSet: 2017 -



INTUITIVE ACCESS TO DIGITAL INFORMATION

Work the way your brain works

Meta 2's unique neuroscience-driven interface design principles allow you to access, manipulate and share digital information easily and naturally. We call this The Neural Path of Least Resistance™, a new zero-learning-curve approach to computing.

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

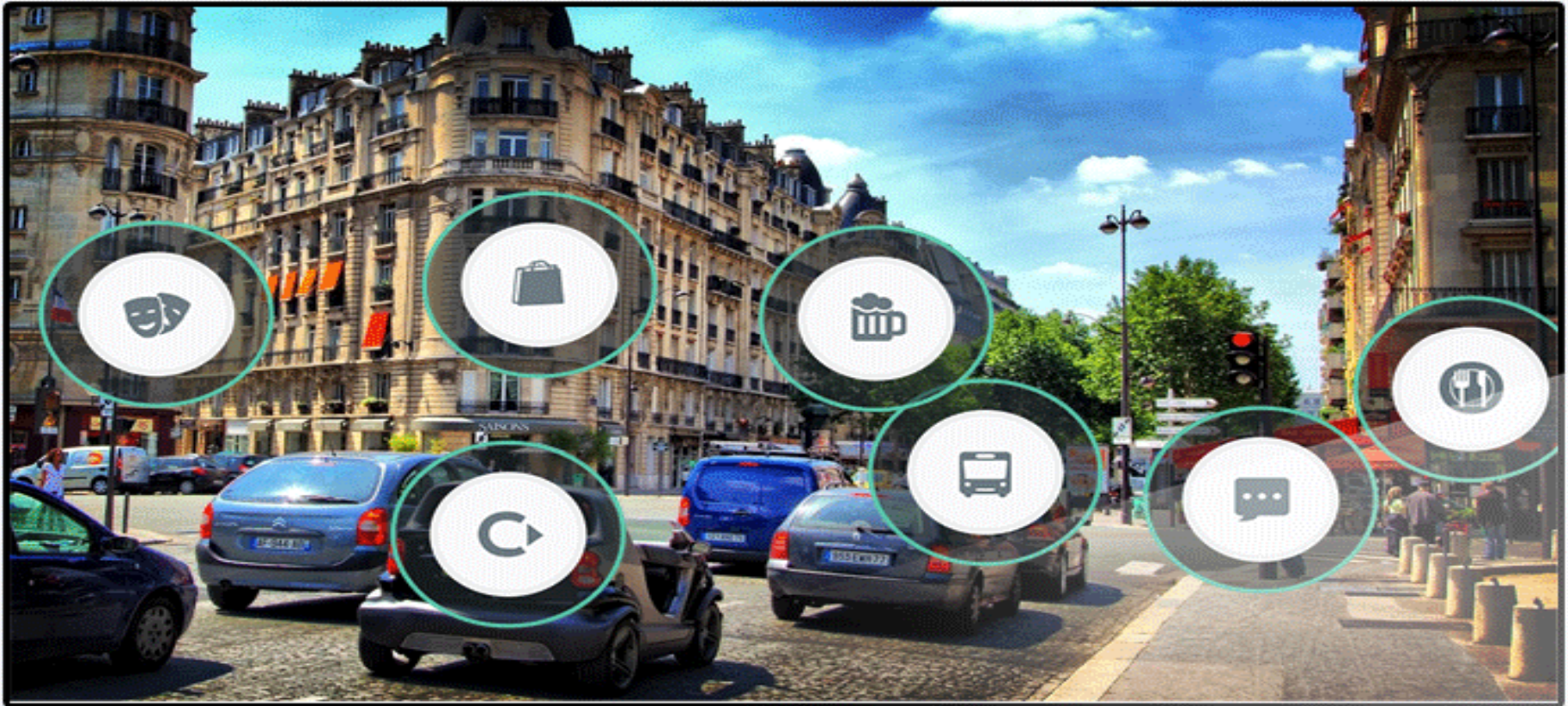
© Dr David E. Probert : www.VAZA.com ©



Augmented Reality: “Skiing Challenge”

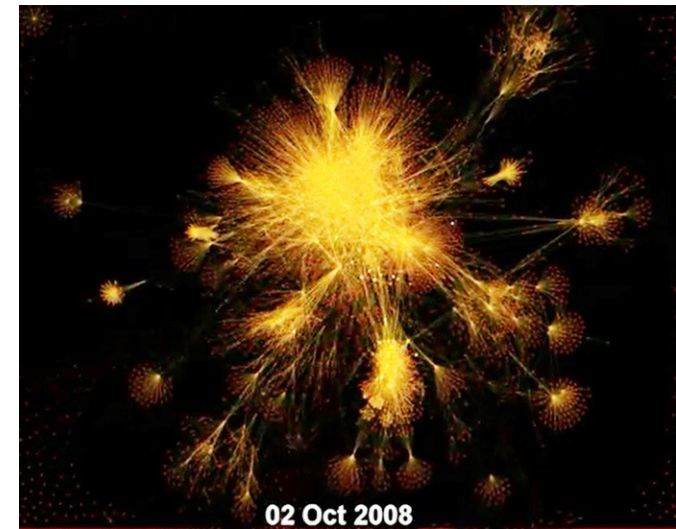
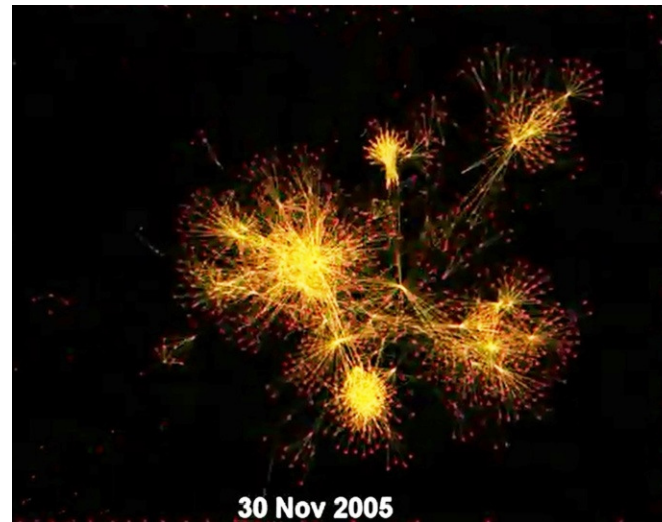
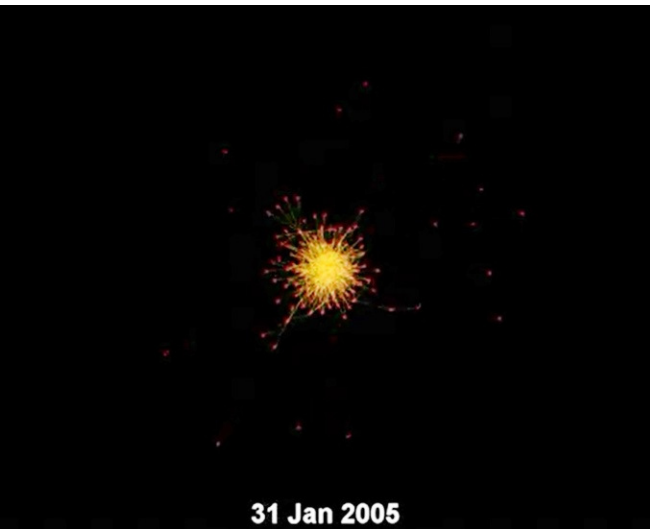


Augmented Reality – “Location Paris”



Multi-Year Evolution of “*Wiki-Web*”

Complex Adaptive System: “Wiki.tudelft.nl”

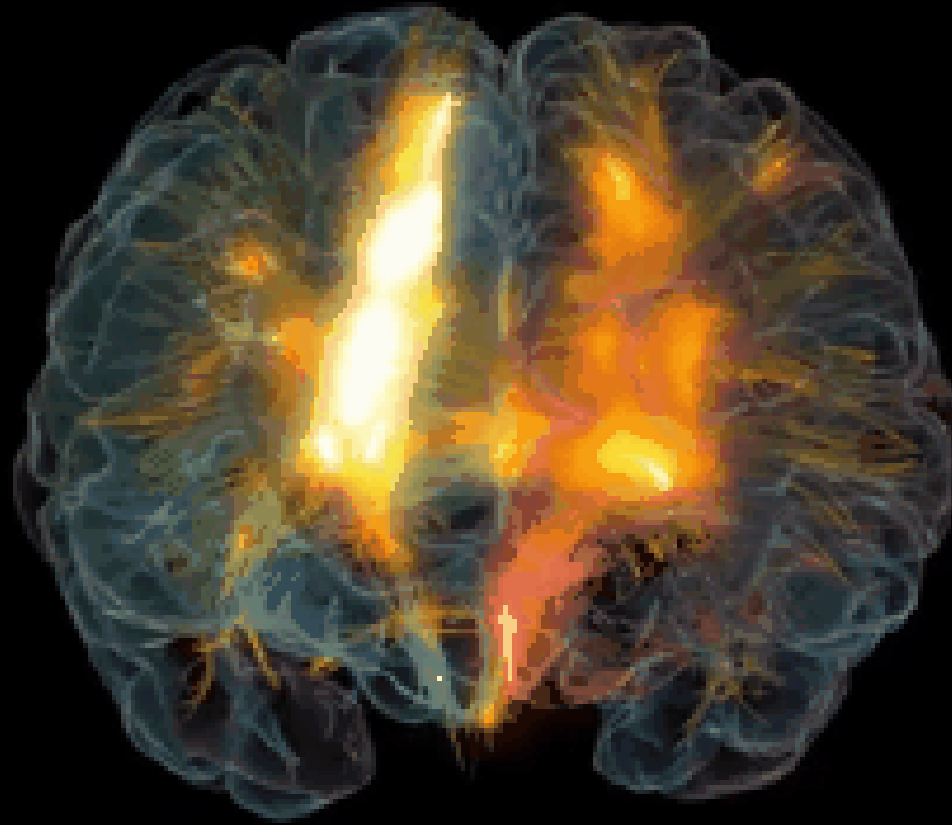


Delft University of Technology - Netherlands
38th International East-West Security Conference

**** “Intelligent Cyber Surveillance” ****
- AI Video Analytics & Biometrics -
Nice, France – 5th/6th Nov 2018
© Dr David E. Probert : www.VAZA.com ©



Real-Time Brain Scan: *Neural Networks*



EEG powered by BCI4AS | SIFT

CyberSecurity: Big Data Visualization

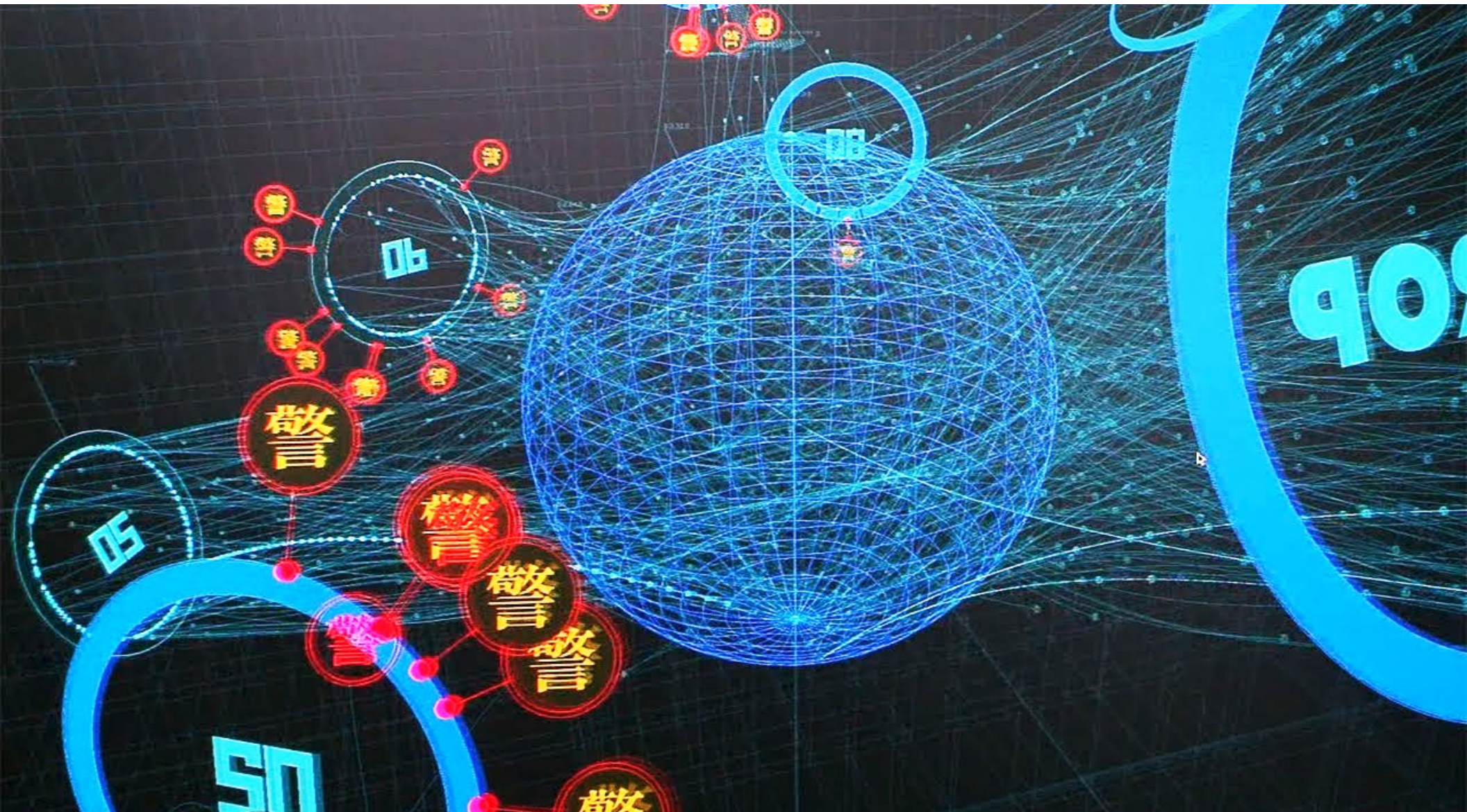
Japan – NICT: “Daedalus” - *Cyber Alert*



NICT = National Institute of Information and Communications Technology

CyberSecurity: Big Data Visualization

Japan – NICT: “Daedalus” - *Cyber Alert*



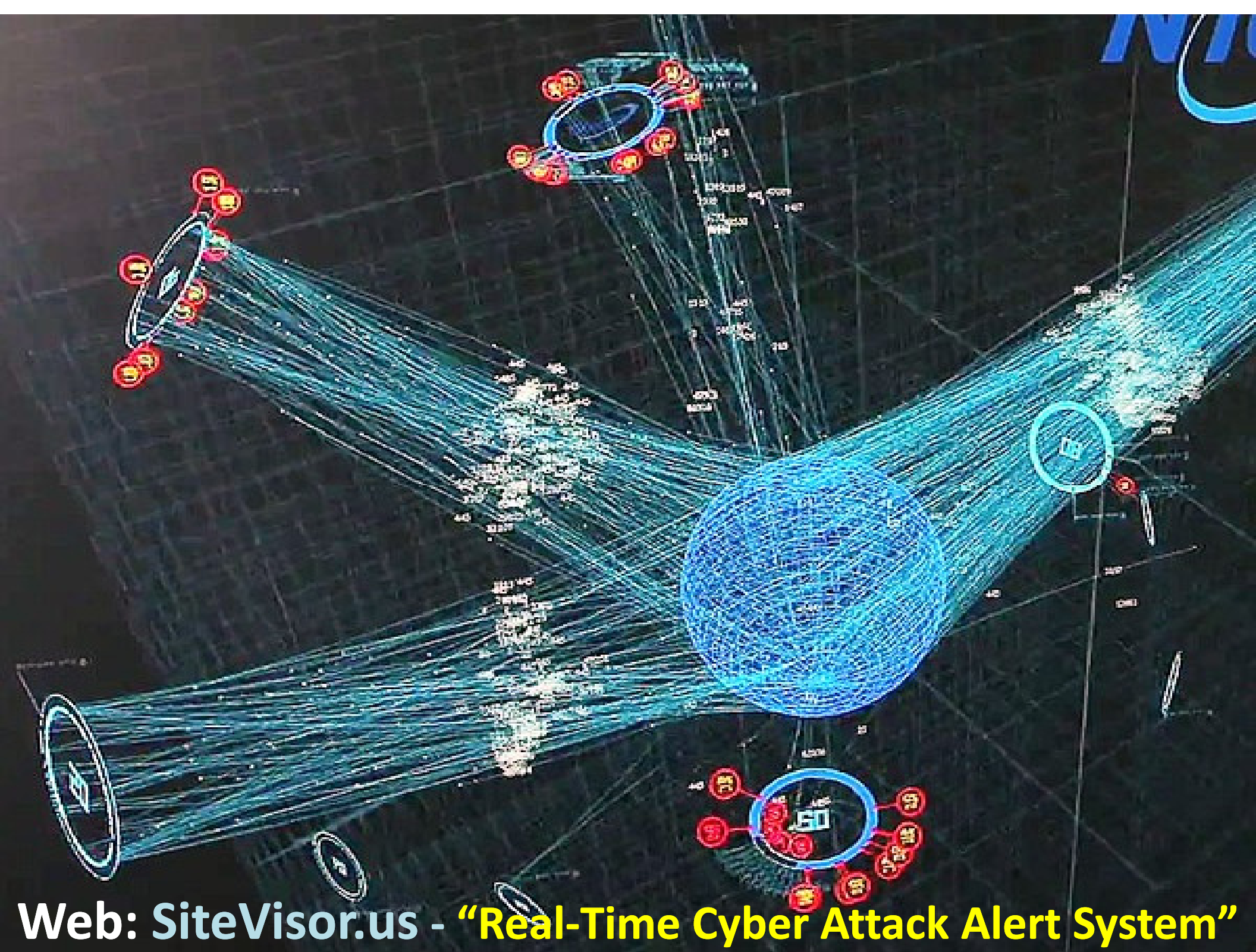
**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©





- UN/ITU *CyberSecurity* Agenda - Quest for CyberConfidence (Eng/Rus)



Link: www.itu.int/en/publications/

38th International East-West Security Conference

** "Intelligent Cyber Surveillance" **

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©

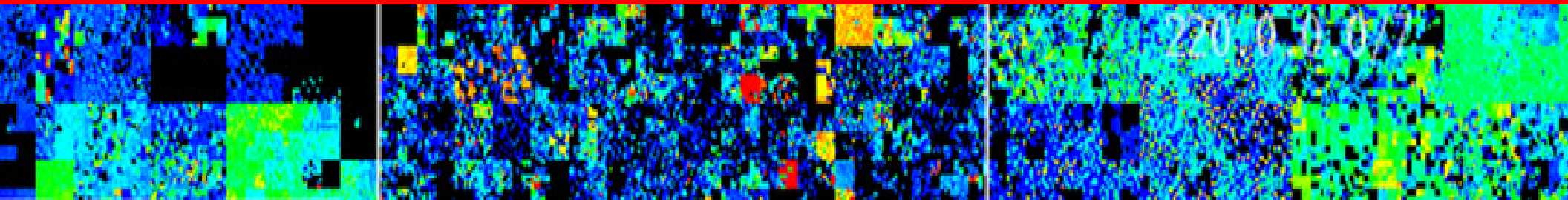


Intelligent **Cyber** Surveillance!...



9 – YOUR Business Security & Surveillance

“YOUR Business Plan”



(9) YOUR Top 3 Actions & RoadMap

- **Action 1:** CSO-Led Board-Level Review & Audit of current Security Tools & Operations – 60 days
- **Action 2:** Investigate Major CyberSecurity Risks & Potential “Terror Attack” Scenarios - 30 days
- **Action 3:** Develop Multi-Year Plan, Budget & Roadmap to Mitigate Identified Risks to include:
 - a) Business-Wide Cyber-Physical Security Operations
 - b) “IoT” Cyber Security for both Legacy & New Assets
 - c) Professional Cyber Security Training & Development
 - d) Security Staff Scenario Exercises for “*Terror Alerts*”

Integrated Cyber & Physical Security: ***“The Shopping List”*** ***...Smart Security for Business & Government is a Multi-Year Programme!***

- 1) Cybersecurity Team:** Establishment of a CERT/CSIRT & Professionally Qualified Cybersecurity Team within your Business or Government Organisation
- 2) CNI:** Long Term Critical Infrastructure Protection (CNI) – Protect Critical Info Assets!
- 3) System Upgrades:** Technical Infrastructure Upgrades including Hardware, Software, Databases, Secure Network Links, Biometrics & RFID
- 4) Back-Up:** Disaster Recovery, Business Continuity and Back-Up Systems
- 5) Physical :** Physical Security Applications – CCTV, Alarms, Control Centre
- 6) Awareness Campaign:** Business-Wide Campaign for Cybersecurity Awareness
- 7) Training:** Cybersecurity Skills, Certification & Professional Training Programme
- 8) Encryption:** Implement Data Encryption for Business Critical Info
- 9) Rules & Policies:** Develop and Communicate Cyber & Physical Security Policies for ALL Staff & Contractors to cover topics such as Wi-Fi and “Bring your Own Device (BYOD)”

*.....It is also recommended to develop an economic **“Cost-Benefit”** analysis and detailed Business Case in order to justify **Cybersecurity Investment** for your Board of Directors!*

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©

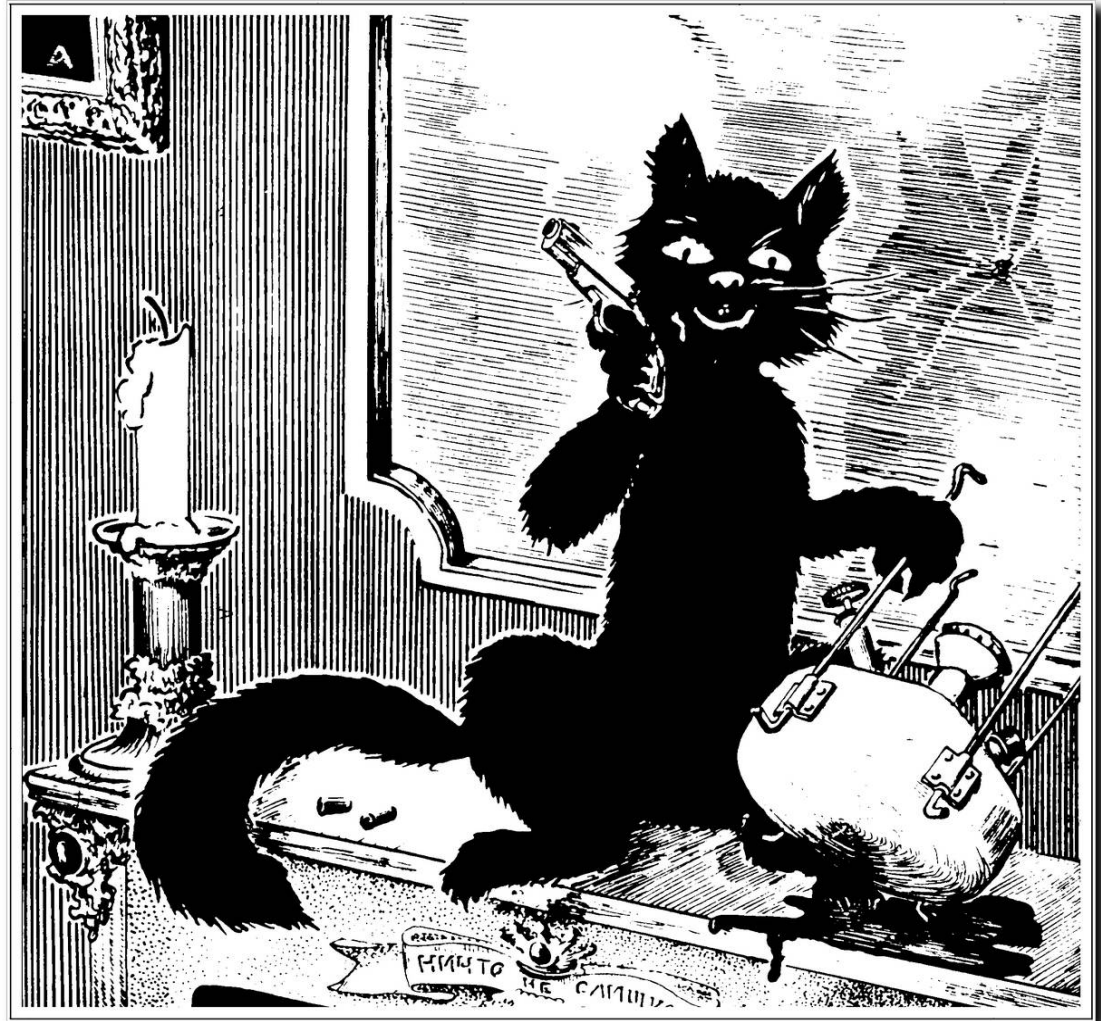


“Cyber Defence” against **“Urban Terrorism”**

Prepare for Terror Threats & Attacks
through YOUR **Intelligent Real-Time Cyber
& Physical Surveillance Operations!**

Don't be taken by surprise by **Бегемот**
- **The Satanic Terrorist Cat** - from
Bulgakov's : *“The Master & Margarita”*

*Graphic Print (1972) courtesy of :
Dr Alexander Rimski-Korsakov
Great Grandson of the Composer*



Bulgakov's Devil Cat – **Бегемот** - Master & Margarita - 1972
Pen & Ink Drawing by **Dr Alexander Rimski-Korsakov**

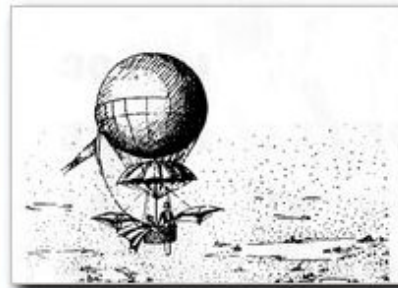
**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

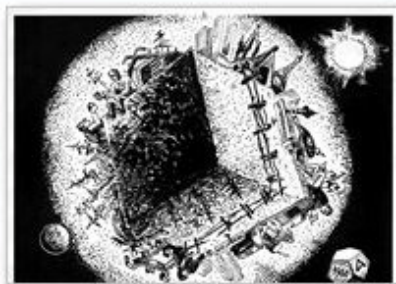
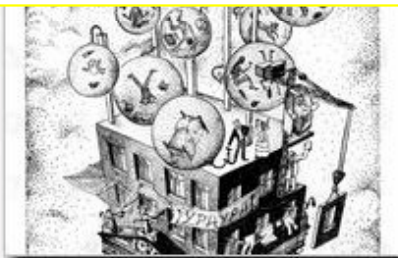
Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©





The Surrealistic Paintings of Dr Alexander Rimsky-Korsakov



Web Link: www.valentina.net/ARK3/ark2.html

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



*Cyber*Vision 2020-2030 & *Beyond*!

- "CyberVisions" for Business & Government -



CyberVision: 2020 to 2030
YOUR 21stC CyberSecurity ToolKit!



Dr David E. Probert
VAZA International

(1) CyberVision: 2030



Intelligent Cyber Surveillance
AI Video Analytics & Biometrics!



Dr David E. Probert
VAZA International

(2) Cyber Surveillance



CyberSecurity Strategy for
Critical National Infrastructure!



Dr David E. Probert
VAZA International

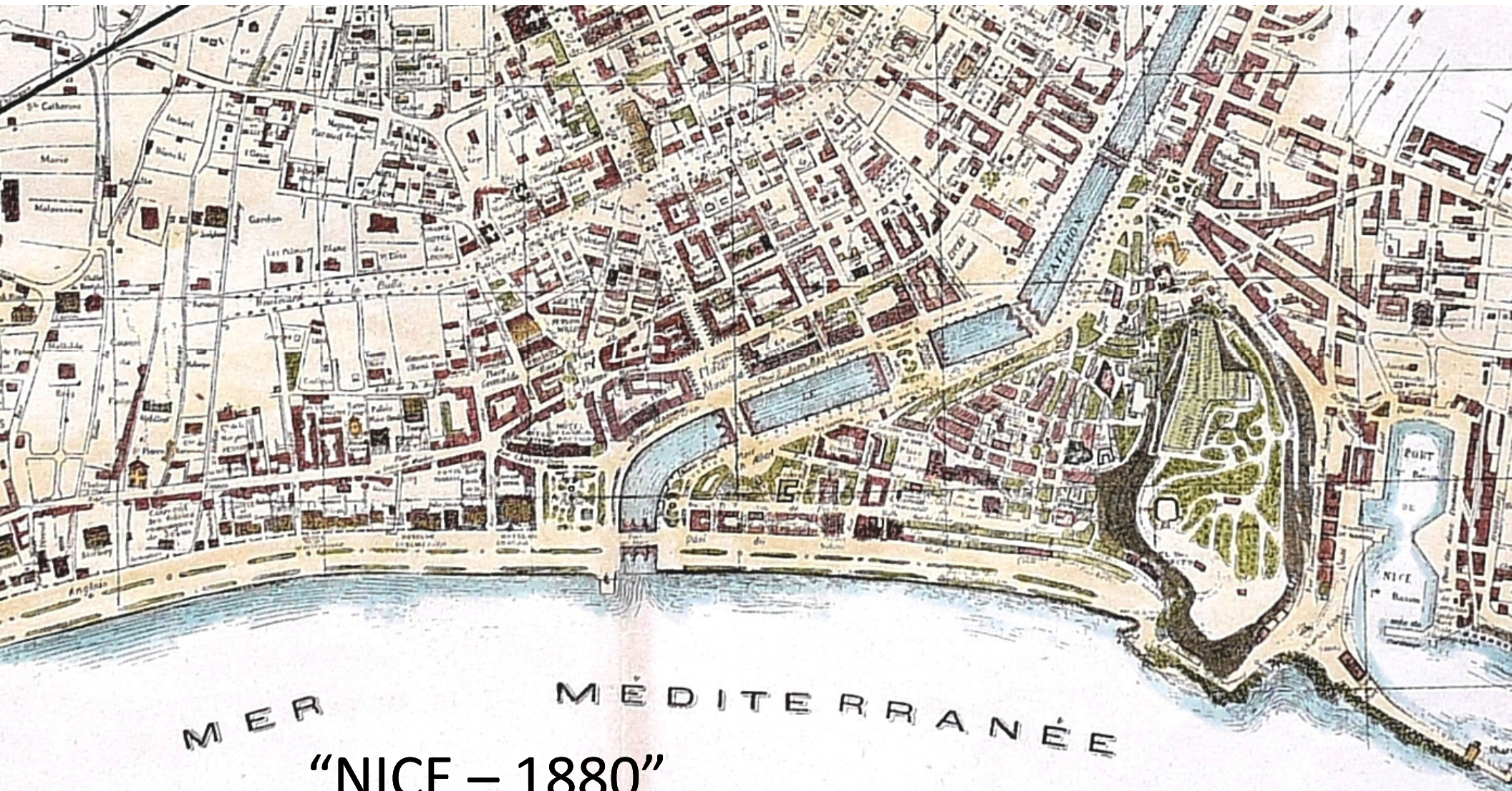
(3) Critical CyberSecurity

*** 38th International East-West Security Conference: NICE, France-2018 ***

Download *Cyber* Slides: www.valentina.net/NICE2018/

*Cyber*Vision 2020-2030 & *Beyond!*...

38th East-West Security Conference: Nice, UK



“NICE – 1880”

**** “Intelligent Cyber Surveillance” ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



CyberVision 2020-2030 & **Beyond!**...

38th East-West Security Conference: Nice, UK

Thank-You!

Download Presentation Slides:

www.Valentina.net/NICE2018/

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Download Presentation Slides:
www.Valentina.net/NICE2018/



Thank you for your time!

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France – 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



Additional *Cybersecurity* Resources

"Master Class - Smart Theory & Practice"	"Master Class 2012 - Smart Design"	"21stC Armenia - 2012: Smart Economy"	"21stC Armenia - 2012: Smart Security"	"21stC Armenia: Smart Governance"
"Real-Time Armenia" - White Paper	"Real-Time Armenia" - Slides	Awesome Armenia: In Photos	Roadmap for Real-Time Armenia- Report	RoadMap for Real-Time Armenia- Slides
"Real-Time Georgia" - GITI 2008 Slides	"Real-Time Georgia" - GITI 2008 Paper	Gorgeous Georgia: In Photos	21stC Georgia: "CyberVardzia" - Paper	21stC Georgia - "CyberVardzia" - Slides
			ITU/CITEL: Cybersecurity in the Americas	ITU/CITEL: Cybersecurity Skills Building

Link: www.valentina.net/vaza/CyberDocs

**** "Intelligent Cyber Surveillance" ****

- AI Video Analytics & Biometrics -

Nice, France - 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©



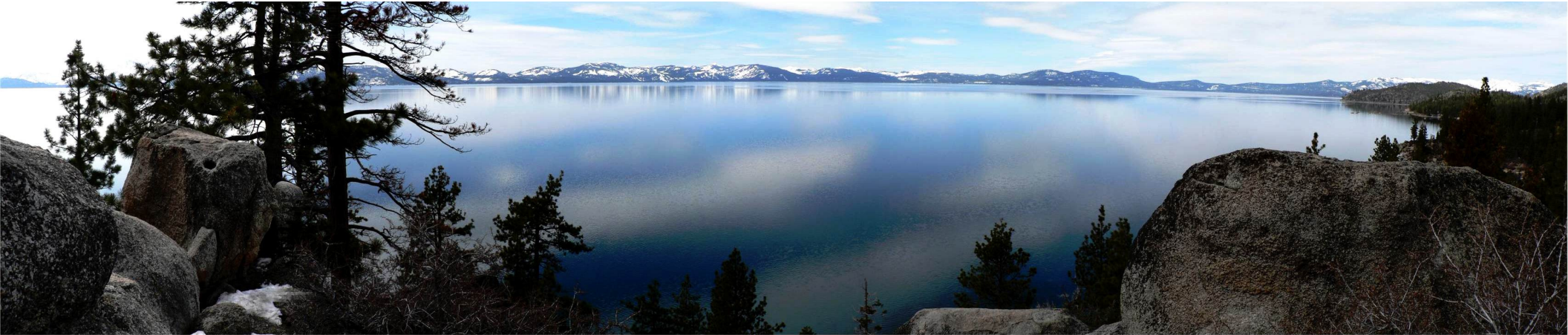
Professional Profile - *Dr David E. Probert*

- **Computer Integrated Telephony (CIT)** – Established and led British Telecom's £25M EIGER Project during the mid-1980s' to integrate computers with telephone switches (PABX's). This resulted in the successful development and launch of CIT software applications for telesales & telemarketing
- **Blueprint for Business Communities** – Visionary Programme for Digital Equipment Corporation during late-1980's that included the creation of the "knowledge lens" and "community networks". The Blueprint provided the strategic framework for Digital's Value-Added Networks Business
- **European Internet Business Group (EIBG)** – Established and led Digital Equipment Corporation's European Internet Group for 5 years. Projects included support for the national Internet infrastructure for countries across EMEA as well as major enterprise, government & educational Intranet deployments. Dr David Probert was a sponsoring member of the European Board for Academic & Research Networking (EARN/TERENA) for 7 years (1991 → 1998)
- **Supersonic Car (ThrustSSC)** – Worked with Richard Noble OBE, and the Mach One Club to set up and manage the 1st Multi-Media and e-Commerce Web-Site for the World's 1st Supersonic Car – ThrustSSC – for the World Speed Record.
- **Secure Wireless Networking** – Business Director & VP for Madge Networks to establish a portfolio of innovative fully secure wireless Wi-Fi IEEE802.11 networking products with technology partners from both UK and Taiwan.
- **Networked Enterprise Security** - Appointed as the New Products Director (CTO) to the Management Team of the Blick Group plc with overall responsibility for 55 professional engineers & a diverse portfolio of hi-tech security products.
- **Republic of Georgia** – Senior Security Adviser – Appointed by the European Union to investigate and then to make recommendations on *all* aspects of IT security, physical security and BCP/DR relating to the Georgian Parliament, and then by UN/ITU to review Cybersecurity for the Government Ministries.
- **UN/ITU** – Senior Adviser – Development of Cybersecurity Infrastructure, Standards, Policies, & Organisations in countries within both Europe & Americas

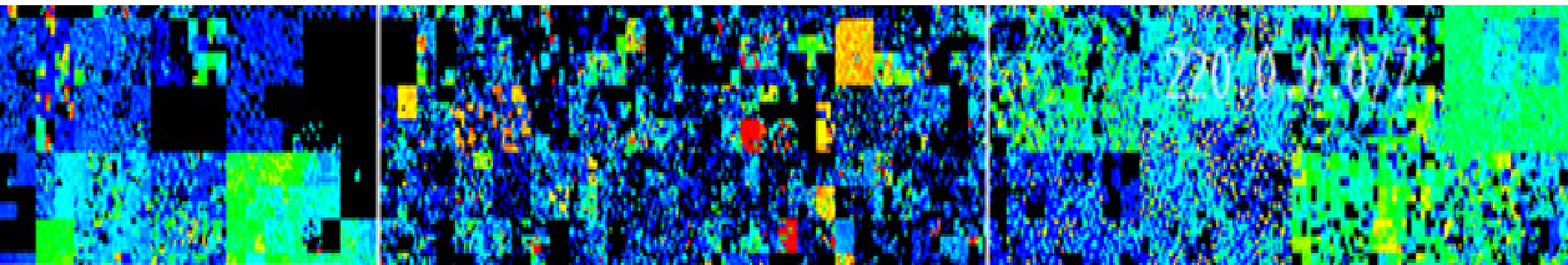
Dr David E. Probert is a Fellow of the Royal Statistical Society, IEEE Life Member and 1st Class Honours Maths Degree (Bristol University) & PhD from Cambridge University in Self-Organising Systems (Evolution of Stochastic Automata), and his full professional biography is featured in the Marquis Directory of Who's Who in the World: 2007-2018 Editions.

Intelligent **Cyber** Surveillance!...

38th East West Security Conference: **Nice, France**



BACK-UP SLIDES

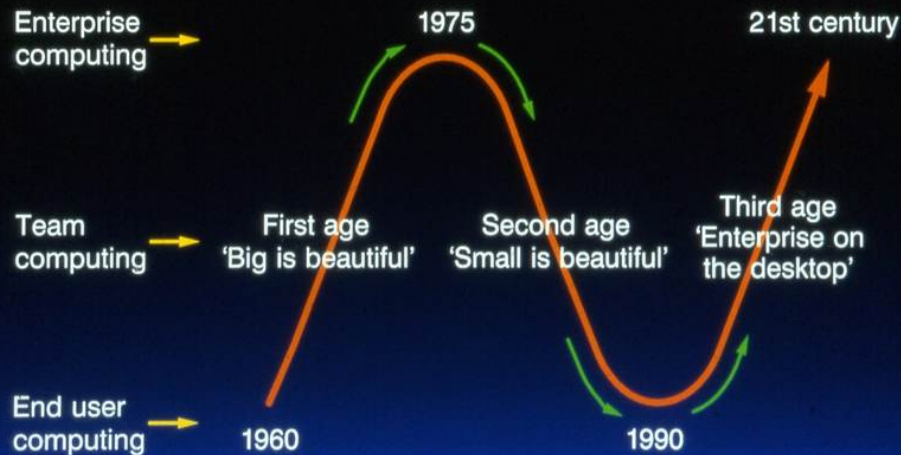


Ages of Computing, Networking & Intelligence: **1960 – 2020+**

- **1960 to 1980 (Computing Big Bang – Physical Data):** “Big is Beautiful”
– Era of Massive Mainframe Computing with Minimal Networking
- **1980 to 2000 (Network Architecture – Fluid Information):** “Small is Beautiful” – Evolution of Networking (Ethernet, Token-Ring, and TCP/IP: ‘75 – Vint Cerf & Robert Kahn), PCs, Web1.0: ‘92-’94 & Mobile Phones
- **2000 to 2020+ (Intelligent Systems – Cellular Knowledge):** “Smart Solutions”- Web2.0, Social Media, Smart Phones & Intelligent Apps.
- **Summary:** The Evolution of ICT mirrors the Evolution of the Physical Universe, DNA/RNA Bio-Architecture, Intelligent Organisms & Life.

Ages of Computing, Networking & Intelligence: 1960 - 21stC

Overview: Ages of Computing



First Age of Computing

1960 → 1975 - *Convergence*

- Physical explosion of size and power - 'Hierarchical Architecture'
- 'Big is BEAUTIFUL'
- Created commodity elements: MIPS and MBITS
- Focus on DATA - a STATIC universe



Second Age of Computing

1975 → 1990 - *Bridge*

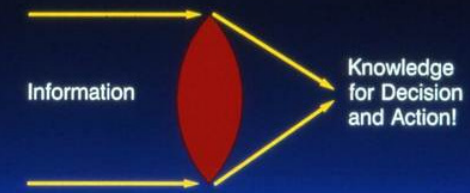
- Emergence of Networking Architecture - 'Distributed Architecture'
- 'Small is BEAUTIFUL'
- Created Open Systems: OSI
- Focus on INFORMATION - a DYNAMIC Universe



Third Age of Computing

1990 → 2005 - *Focusing Lens*

- Biological Explosion of Intelligence - 'Organic Architecture'
- 'Enterprise on the DESKTOP'
- Focus on KNOWLEDGE - a SELF-ORGANISING Universe



**** "Intelligent Cyber Surveillance" ****

- *AI Video Analytics & Biometrics* -

Nice, France - 5th/6th Nov 2018

© Dr David E. Probert : www.VAZA.com ©

