THALES
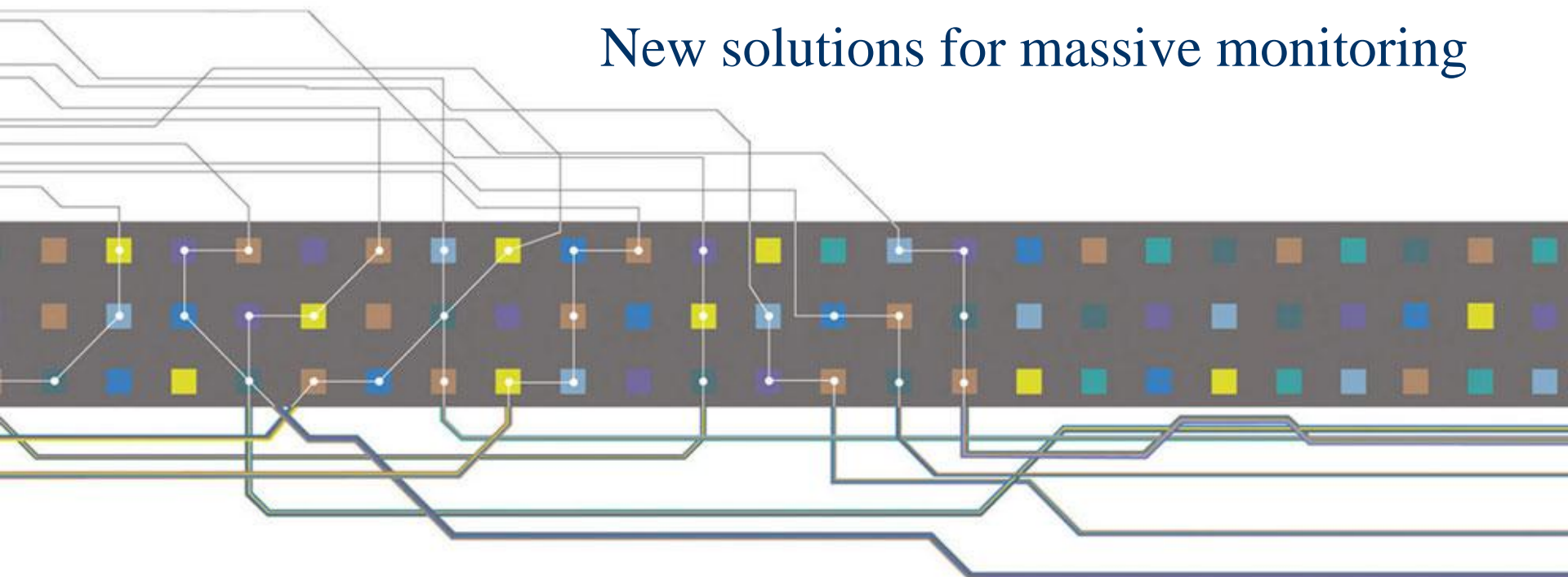
New solutions for massive monitoring

ISS World Europe

Jean-Philippe LELIEVRE, jean-philippe.lelievre@fr.thalesgroup.com

Prague, October 1st, 2008

Military communications characteristics :

- numerous

- redundant/coupled

- reconfigurable (waveform, topology) : Software Defined Radio (SDR)

- multi-bandwidth

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Paramilitary forces/terrorist groups… communications characteristics :

- common coms (mobile phones…)

- Private Mobile Radio (PMR)

- civilian HF

- satellite coms (VSAT,Inmarsat, Iridium,

    Aces, Thuraya…)

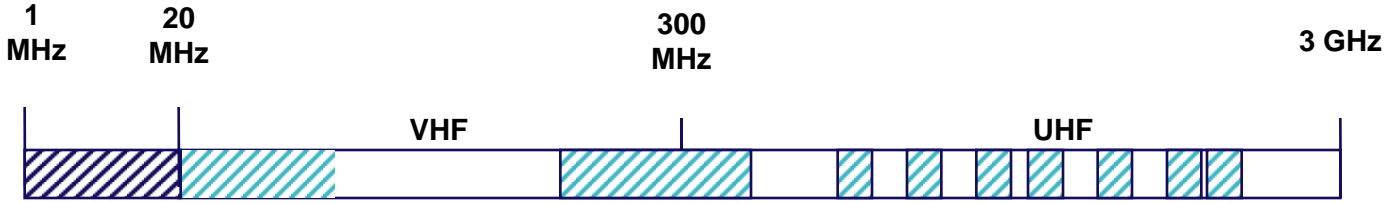- @ (Wi-fi, Wimax, Bluetooth…)

    - old military equipment

+

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COMINT Target trends

| 1 MHz | 20 MHz | | 300 MHz | | 3 GHz |

VHF   UHF

1-30 MHz : HF communications

20-88 MHz : VHF tactical military communications

225-400 MHz : UHF aero military communications

PMR, CDMA 2000

900 & 1800 MHz : GSM

1600 MHz : SAT (Inmarsat, Thuraya,….)

DVB T

1900 et 2100 MHz : UMTS, CDMA

1200 & 1500 MHz : GPS

2.4GHz : WLAN

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Mission planning

From C4I

Multi-channel, wide-band interception

Identification

Monitoring

Direction finding

Technical analysis

Jamming

Realtime

Offline

Geolocation

Jamming assessment

Production

To C4I

The hidden part in an intangible process : information superiority

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Spectrum occupancy

higher density

higher number of coms

increase of the bandwidth to monitor

higher bitrate/Hz => more

- compressions
- vocoders
- corrector codes
- multiplexers
- proprietary modes
- …
- crypto use

=> It is getting more complicated

⇒Apparent paradox : mass production is required to target

⇒Automatisation

⇒ Capture

⇒ Recording

⇒ Processing

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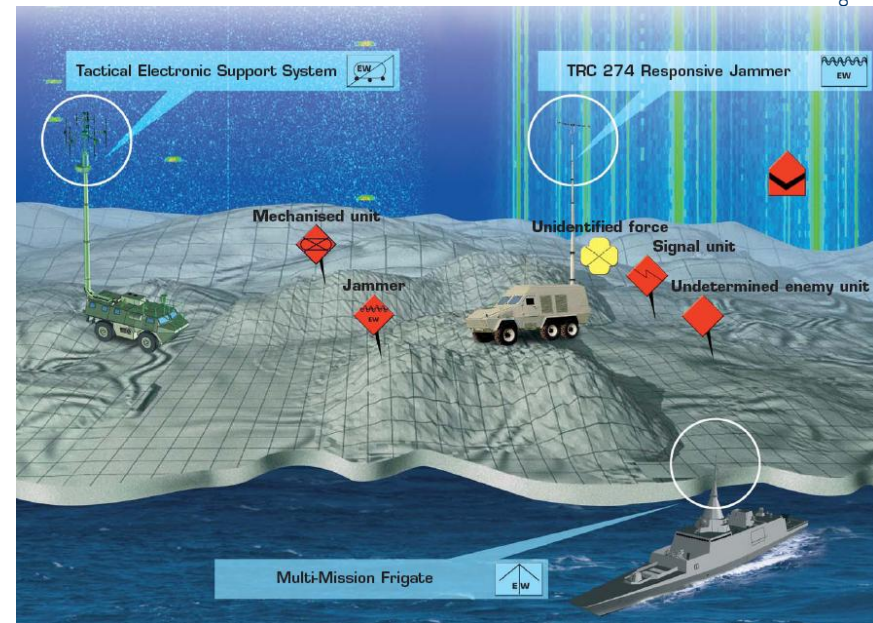
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- Broad spectrum monitoring
- Multimode/reconfiguration
- Multiple simultaneous networks monitoring
- Access to the content issue =>
- Increasing need for cryptoanalysis : « back in USSR »
=> direction finding
=> technical analysis
=> surgical neutralisation

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CIEW: Thales answer to these challenges

- The leading European exporter of CIEW solutions worldwide : sensors, systems, and CIEW operation centres

- EW System engineering and integration expertise in more than 20 countries

- All-source intelligence collection, fusion and dissemination to C4I

- Dedicated CIEW hardware and software expertise :

  - Sensor design

  - Technical analysis

  - All-source data fusion

  - Intelligence dissemination

- End-to-end offerings of CIEW as part of C4ISR capabilities :

  - Single-source multi-sensor

  - Multi-source intelligence and surveillance

  - Sensor-C2 integration

  - Networked communication architecture

COMMUNICATIONS
INTELLIGENCE
& ELECTRONIC
WARFARE

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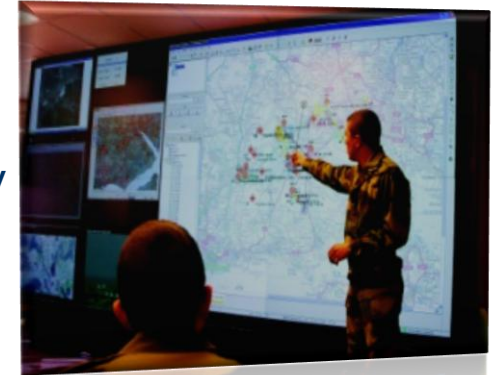October 2008

INTELLIGENCE Q

Threats to national security, external and internal

- Terrorists, guerilla, mafia, adverse military

Users : strategic military intelligence or government security forces

- Can be civil or military, joint or operated by Army, Navy, Air Force or Government

Mission package : intelligence collection platforms, COMINT exploitation centres
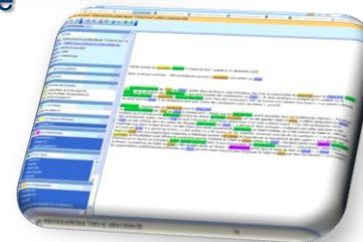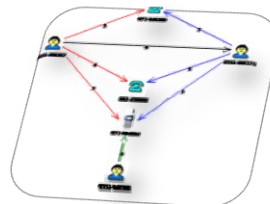
Monitoring centre

Fixed or mobile interception (HF, V/UHF, SHF, Internet, PSTN…
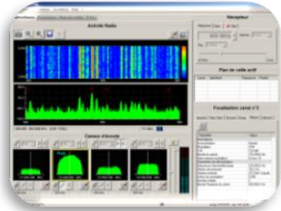
Dedicated exploitation software

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■ Transverse know-how : from sensor to system, from COMINT to C4ISR

COMINT production

SIGINT exploitation

Multi-source fusion

Intelligence-C2 integration

■ 3 user-oriented solutions

INTELLIGENCE Q

NAVAL Q

LAND Q

National solutions for threat assessment

Tactical solutions for maritime communications electronic support

Tactical solutions for Army communications electronic support and attack

■ Common hardware & software equipments (building blocks)

TRC 6000 Technical analysis suite

TRC 6200 light interception & DF payload

TRC 6300 tactical interception & DF payload

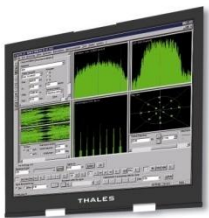TRC 6500 Strategic network monitoring

TRC 274 Smart communications jammer

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Receivers (HF, VHF, UHF, SHF)

Front end

Back end

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Front end capabilities

- *Frequency range from 300 kHz to 6 GHz (C/X/Ku band as an option)*
- *Comprehensive Automatic Wideband Monitoring solution*
  30 MHz in HF,
  80/160/320 MHz in V/UHF,
  N x 72 MHz in SHF
- *Software defined & Scalable architecture up to 200 MHz Instantaneous Bandwidth*
- *Real-time & automatic detection,classification, demodulation and decoding of all modern and stealthy signals (FH, LPI) (HF modem, V/UHF , Combat Net Radio, Micro-Wave, SATCOM, VSAT, Thuraya/Inmarsat/DVB…)*
- *Multi-channel automatic/manual processing : n X 128 channels*
- *Real time listening-in of communications channels*
- *Wideband and Narrowband Digital recording for off-line analysis*

Back end capabilities

Monitoring center

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Thank you!

Welcome to our booth

jean-philippe.lelievre@fr.thalesgroup.com

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