THALES

Impact du Numérique sur le secteur de l'Aérospatial & la Défense

SIEGFRIED USAL
VP STRATEGIE, RECHERCHE ET TECHNOLOGIE

1st and 2nd US Offset Strategy

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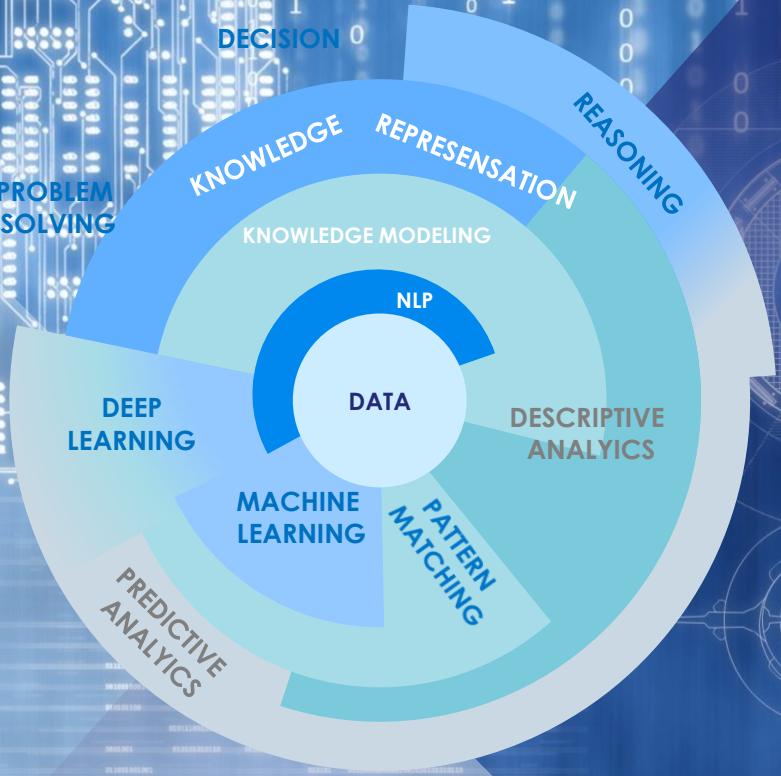
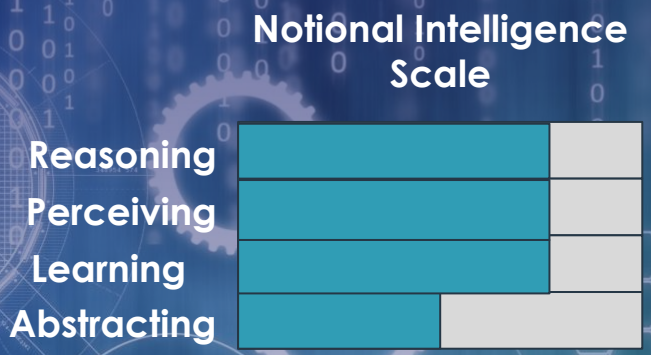
Intelligence Artificielle: les données, la nouvelle monnaie d'échange





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Collaboration Homme-Machine plutôt que robotisation totale

Collaboration Homme-Machine plutôt que robotisation totale

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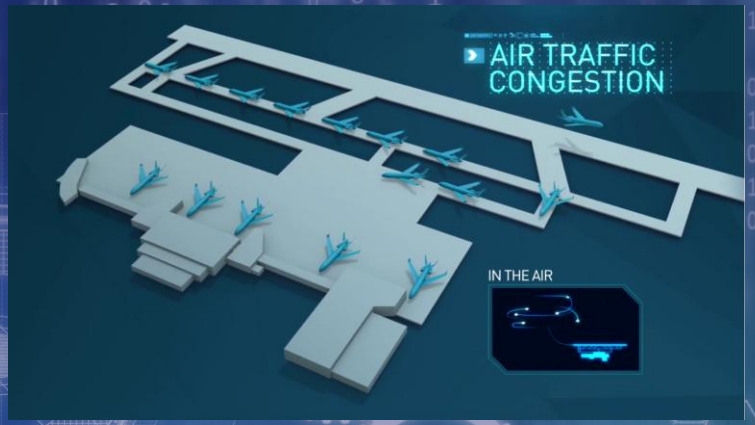
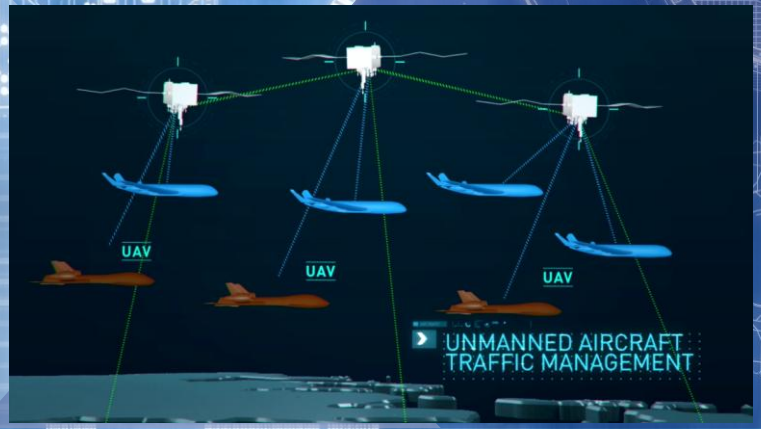
IA Capacités de traitement et gestion augmentées – Contrôle Aérien





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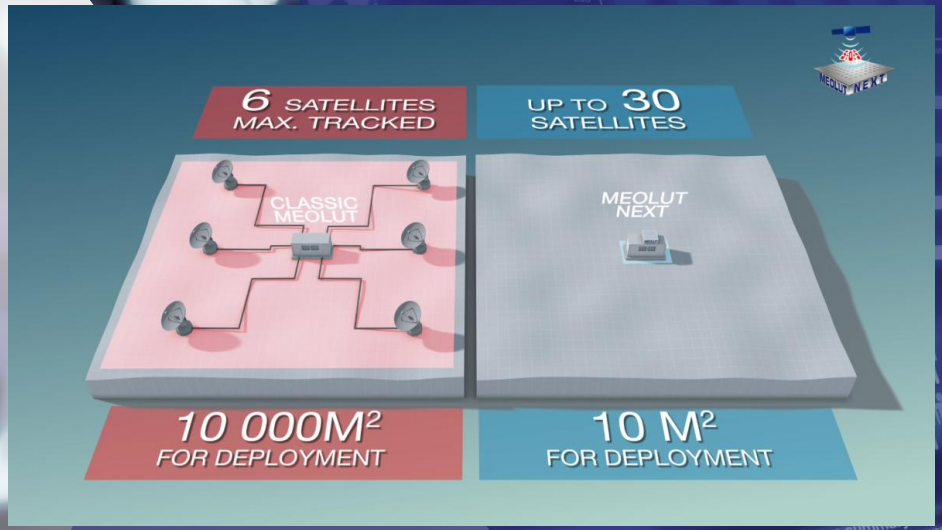
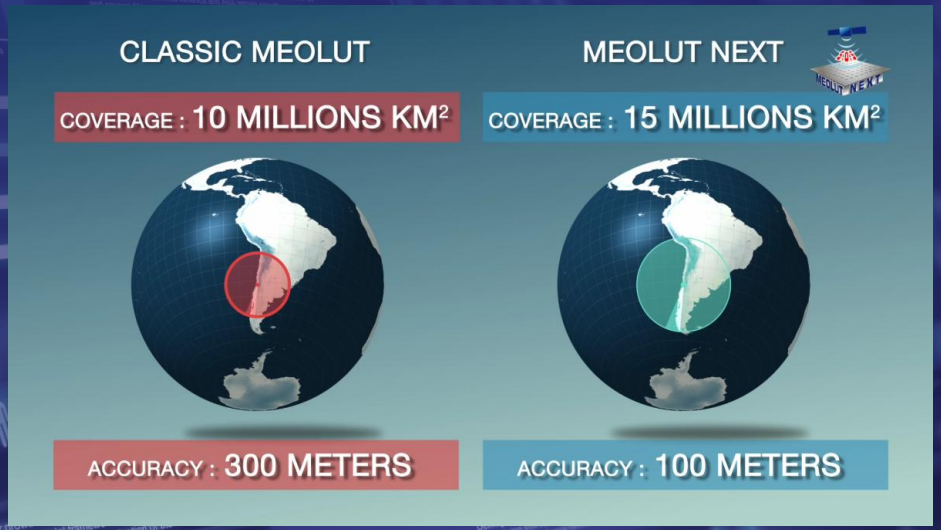
Software Defined Everything: radios, satellites, radars, capteurs…

SYNAPS
Software Defined Radio

THALES

Coûts d'infrastructure optimisés/performances accrues– MEOLUT Next





Plateformes disruptives à bas coûts: the « Space Drone »

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De la R&T à la R&D: des partenariats incontournables

THALES Urban Transportation Consortium (CUTRIC)

Objectives & Technical Approach:

- A framework to foster the research, development, demonstration, and integration (RDD&I) of zero- and low-emissions transportation technologies that are digitally connected and cybersecure
- Support industry-academic collaborations in the development of next-generation technologies for Canadian transportation systems.

Partners:

Research Areas

- Research Pillars: 1) Low & Zero Emissions Vehicular and Infrastructure Innovation; 2) Lightweight Materials & Processes; 3) Autonomous Connected Vehicles; 4) Cyber & Critical System Security; 5) Big Data & Analytics

Investment

- Membership "pay to play" model
- Thales contribution – membership & project(s)

THALES Urban Sciences Consortium (UMRsu)

Objectives & Technical Approach:

- UMRsu is a unique research and innovation network bringing together players from business, government, and the academic community for the purpose of developing smart and sustainable cities
- By collecting, integrating, and analyzing data, the UMRsu explores the workings of the city in all its facets

UMRsu UNITÉ MIXTE DE RECHERCHE SCIENCES URBAINES

Founding Partners

THALES, VILLE DE QUÉBEC, UNIVERSITÉ LAVAL, INRS Université d'avant-garde, PARC TECHNOLOGIQUE DU QUÉBEC MÉTROPOLITAIN

Research Areas

- Social acceptability of innovation, Big data and open data analytics, Sustainable development and the environment, Smart urban resource and infrastructure management, Governance and decision-support systems, Public safety and wellness, Transport and urban logistics

Investment

- research and innovation activities are estimated at $19.2 million
- $3 million in funding secured to create the joint research unit and get it up and running

THALES Cybersecurity Industrial Chair

Objectives & Technical Approach:

- Concordia University received a Senior Industrial Research Chair as part of NSERC IRC Program
- The industrial research chair will pursue cybersecurity enhancements for Quebec's power distribution smart grid systems

Team:

THALES, Concordia University, NSERC CRSNG, Hydro Québec Institut de recherche

Research Areas

- Cutting edge research into Quebec's power grid system with the intent of protecting the province's power supplier from the threat of attacks on its cyberphysical system encompassing software systems, communication technology and sensors

Investment

- $2.165 million over five years

THALES Aerospace Consortium (CRIAQ)

Objectives & Technical Approach:

- Increase the competitiveness of the aerospace industry, and enhance the collective knowledge base in aerospace through improved education and training of students
- uses an open innovation model to develop collaborative research projects (strong cooperation between industry, academia and research centers) focusing on industry needs

Partners:

BOMBARDIER, Pratt & Whitney Canada, CAE, Rolls-Royce, THALES, SAFRAN, 3M, HÉROUX DEVTEK, Avior, MDA, Bodeclair, Fusia, Bombardier, Nelson, Lafarge, BBGO

Research Areas

- Work across 5 strategic pillars including: 1) Collaborative Research; 2) Innovation; 3) Training of a highly qualified workforce; 4) Promotion; 5) National and International Collaborations

Investment

- 130 completed and projects underway totaling $129 million
- Thales investment = $ 25K/yr membership + projects

THALES Artificial Intelligence Consortium (IVADO)

Objectives & Technical Approach:

- Bringing together industry professionals & academic researchers to develop cutting-edge expertise in data science, operational research (OR) and artificial intelligence (AI)
- Creating opportunities for knowledge exchange and collaborations between the specialists, partners, researchers and students in its network
- over 900 affiliated scientists

IVADO HEC Montréal Polytechnique Montréal Université de Montréal

Key Members:

Research Areas

- Data analytics including data-mining, data visualization, data management, statistical analysis & decision support
- OR including mathematical optimization, heuristics & metaheuristics, black boxes optimization, stochastic models & simulation
- AI Artificial intelligence including deep learning, machine-learning, language processing, text, shape and image recognition, artificial and computer vision

Investment

- Federal funding in excess of $93 million

THALES 5G Consortium (ENCQOR)

Objectives & Technical Approach:

- Québec and Ontario have agreed to jointly support investment in ultra-high speed communications infrastructure demonstrator to help develop the 5G network -- the next generation of digital communication technology
- Allow small-to-medium enterprises (SMEs) access to pre-commercial technologies to establish a global leadership position in 5G

Partners:

- Provinces of Ontario & Quebec
- Global ICT companies including Ciena, Ericsson, Thales, IBM and CGI

Research Areas

- Create an open innovation ecosystem to accelerate the growth of information and communications technology (ICT) and sectors that use these technologies

Evolution de la Chaine de valeur
Des effets sur les toutes les modes operatoires de toutes les acteurs
Engagement des donneurs d'ordre dans la chaine d'innovation
Digital culture
New ways of working
Digital talents

THALES