Projects

Advanced Cyber-Security Simulation Platform For Preparedness Training in Aviation, Naval and Powergrid environments (FORESIGHT) (H2020 SC7)
Bellekens, X., Atkinson, R. & Tachtatzis, C.
European Commission - Horizon 2020
1/10/19 → 30/09/22

Applicability of Localised Heating for metal forging
Andonovic, I., Atkinson, R., Harle, D. & Tachtatzis, C.
EPSRC (Engineering and Physical Sciences Research Council)
1/02/15 → 30/09/15

Asbestos Fibre Counting (Ethos / TDL)
Tachtatzis, C., Cardona Amengual, J., Andonovic, I., Atkinson, R., Cleary, A. & Michie, C.
1/02/18 → 31/01/19

Asset Analytics Automation
Michie, C., Andonovic, I., Atkinson, R. & Tachtatzis, C.
Aggreko PLC, DATALAB (SFC Innovation Centre, administered by the University of Edinburgh)
4/01/16 → 3/01/17

Automatic annotation of subsea survey video
1/03/17 → 31/01/18

CAUDATA : Scratch and Rebuild Architecture
Tachtatzis, C., Andonovic, I., Atkinson, R., Bellekens, X. & Ben Farah, M. L.
Innovate UK
1/04/21 → 31/05/21

CONSERVE: Contingency Operations for Strategic Infrastructure and the Vulnerable
Atkinson, R., Andonovic, I., Bellingham, R. & Tachtatzis, C.
Innovate UK
1/01/16 → 30/06/17

EPSRC Centre for Doctoral Training in Future Power Networks and Smart Grids | Dickinson, Cari
Tachtatzis, C., Atkinson, R. & Dickinson, C.
EPSRC (Engineering and Physical Sciences Research Council)
1/10/16 → 1/01/21

Fostering Precision Agriculture and Livestock Farming through Secure Access to Large-Scale HPC-Enabled Virtual Industrial Experimentation Environment Empowering Scalable Big Data Analytics (H2020-ICT-2018-2020) (CYBELE)
Tachtatzis, C., Andonovic, I., Atkinson, R. & Michie, C.
European Commission - Horizon 2020
1/01/19 → 31/12/21
Improving the Safety, Reliability, and Efficiency of Cargo Transportation using Deep Learning Computer Vision
Cardona Amengual, J., Andonovic, I., Atkinson, R., Michie, C. & Tachtatzis, C.
1/05/19 → 17/08/19

Innovative Composite Cure Tool
Tachtatzis, C., Andonovic, I., Atkinson, R. & Harle, D.
Spirit Aerosystems (Europe) Ltd
1/12/13 → 30/11/14

Internet of Things for Industrial Devices
Ugwuanyi, S. O., Irvine, J. & Atkinson, R.
12/12/13 → …

KTP - Fathom Systems
Tachtatzis, C., Andonovic, I., Atkinson, R., Cleary, A. & Michie, C.
Fathom Systems Limited, KTP Govt (TSB)
4/09/17 → 3/09/20

KTP-Cisco
Atkinson, R., Andonovic, I., Harle, D. & Tachtatzis, C.
KTP Govt (TSB), Cisco Systems
1/02/14 → 31/01/16

KTP-Spartan
Atkinson, R., Andonovic, I., Bellekens, X. & Tachtatzis, C.
Spartan Solutions Ltd, KTP Govt (Momenta)
1/02/20 → 31/07/22

Laas: Light as a Service (LAAS)
Atkinson, R., Andonovic, I., Harle, D. & Michie, C.
Technology Strategy Board TSB
1/10/13 → 30/09/15

Lupovis - 'A Wolf in Sheep's Clothing'. Deception Response HGSP
Bellekens, X., Andonovic, I., Atkinson, R. & Tachtatzis, C.
Scottish Enterprise
1/10/20 → 31/03/21

Lupovis: A Wolf In Sheep's Clothing (Cyber Security ASAP)
Bellekens, X., Andonovic, I., Atkinson, R. & Tachtatzis, C.
Innovate UK
1/04/20 → 28/02/21

Membrane performance study with GSK
Cleary, A., Andonovic, I., Atkinson, R., Michie, C. & Tachtatzis, C.
Glaxo Smithkline (UK)
1/07/16 → 31/03/18

N-Sea Phase 2: Automatic Annotation of Subsea Survey Video
Tachtatzis, C., Andonovic, I., Atkinson, R., Di Caterina, G. & Michie, C.
N-Sea Offshore Ltd, OGIC Oil and Gas Innovation Centre (SFC Innovation Centre, Administered via HEI)
1/06/18 → 30/05/20

Operation & Maintenance Decision Support Analytics for Offshore Wind Generation
Atkinson, R., Andonovic, I., Michie, C., Galloway, S. & Stephen, B.
1/04/13 → 1/10/13
Scalable Radiometric Wireless Sensor Network for Partial Discharge Monitoring in the Future Smart Grid
Atkinson, R., Judd, M. & Soraghan, J.
EPSRC (Engineering and Physical Sciences Research Council)
3/04/13 → 1/04/18

Secure High availability Avionics Wireless Networks (SHAWN)
Atkinson, R., Andonovic, I., Harle, D. & Michie, C.
Technology Strategy Board TSB
1/01/14 → 30/06/16

Smart Agriculture with Intelligent Transportation Systems for Sustainable Future Cities (Newton Fund - Institutional Links)
Andonovic, I., Atkinson, R., Michie, C. & Tachtatzis, C.
British Council
1/04/15 → 31/03/16

Smart Tooling Spirit Phase 3
Tachtatzis, C., Andonovic, I., Atkinson, R., Cleary, A. & Michie, C.
Spirit Aerosystems (Europe) Ltd
3/07/17 → 31/08/18

Spirit Tool Demonstration
Tachtatzis, C., Andonovic, I., Atkinson, R., Cleary, A. & Michie, C.
Spirit Aerosystems (Europe) Ltd
1/02/17 → 31/03/17

Transforming Oilfield Equipment Performance In Mature Basins
Atkinson, R., Andonovic, I. & Tachtatzis, C.
Oil & Gas Technology Centre Limited OGTC
13/08/18 → 12/07/19

Wedagate: Wireless Data Acquisition in Gas Turbine Engine Testing
Glover, I. & Atkinson, R.
Technology Strategy Board TSB
1/11/08 → 31/10/11

Research output
A comparison of the performance of 2D and 3D convolutional neural networks for subsea survey video classification

Classification of cattle behaviours using neck-mounted accelerometer-equipped collars and convolutional neural networks

Developing a Siamese network for intrusion detection systems

Utilising flow aggregation to classify benign imitating attacks

A review of techniques for RSS-based radiometric partial discharge localization
Machine learning based IoT Intrusion Detection System: an MQTT case study (MQTT-IoT-IDS2020 Dataset)

Composite laminate delamination detection using transient thermal conduction profiles and machine learning based data analysis

A review of cyber-ranges and test-beds: current and future trends

Classification of cattle behaviour using convolutional neural networks

Defect detection in aerospace sandwich composite panels using conductive thermography and contact sensors

Utilising deep learning techniques for effective zero-day attack detection

Interoperability and integration testing methods for IoT systems: a systematic mapping study

Gated pipelined folding ADC based low power sensor for large-scale radiometric partial discharge monitoring

Non-destructive identification of fibre orientation in multi-ply biaxial laminates using contact temperature sensors

A taxonomy of network threats and the effect of current datasets on intrusion detection systems

Automatic annotation of subsea pipelines using deep learning

Partial discharge detection and localization: using software defined radio

Cyber-security internals of a Skoda Octavia vRS: a hands on approach
Geometrical thermal analysis as a form of Finite Element Analysis enhancement

Improving RF-based partial discharge localization via machine learning ensemble method

From cyber-security deception to manipulation and gratification through gamification

A novel methodology for macroscale, thermal characterization of carbon fiber-reinforced polymer for integrated aircraft electrical power systems

Low complexity wireless sensor system for partial discharge localisation

Image analysis framework with focus evaluation for in situ characterisation of particle size and shape attributes

A taxonomy of malicious traffic for intrusion detection systems

An efficient algorithm for partial discharge localization in high-voltage systems using received signal strength

RF-based location of partial discharge sources using received signal features

Localization of partial discharge by using received signal strength

The role of in-line image analysis in the transition to continuous manufacturing in the pharmaceutical industry

Received signal strength intensity based localization of partial discharge in high voltage systems
Low power radiometric partial discharge sensor using composite transistor-reset integrator

A taxonomy and survey of intrusion detection system design techniques, network threats and datasets

A supervisory system for partial discharge monitoring

Wireless sensor network for radiometric detection and assessment of partial discharge in HV equipment

Low power high-speed folding ADC based partial discharge sensor for wireless fault detection in substations

Calibration of free-space radiometric partial discharge measurements

Machine learning approach for detection of non-Tor Traffic

Diagnostic potential of free-space radiometric partial discharge measurements

Radio location of partial discharge sources: a support vector regression approach

In-line monitoring of particle size and shape from image-based measurements

Machine learning approach for detection of non-Tor traffic

Wireless sensor network for radiometric detection and assessment of partial discharge in HV equipment

Enabling digitisation of continuous manufacturing processes: the role of image analysis

Trie compression for GPU accelerated multi-pattern matching
Shallow and deep networks intrusion detection system: a taxonomy and survey

Validation of partial discharge emulator simulations using free-space radiometric measurements

Strategies for protecting intellectual property when using CUDA applications on graphics processing units

Threat analysis of IoT networks using artificial neural network intrusion detection system

Multiple source localization for partial discharge monitoring in electrical substation

Localisation of partial discharge sources using radio fingerprinting technique

Image-based monitoring for early detection of fouling in crystallisation processes

Radiometric wireless sensor network monitoring of partial discharge sources in electrical substations

Comparison of contact measurement and free-space radiation measurement of partial discharge signals

KernelSOM handover optimisation: outdoor performance evaluations

A decision support framework for proactive maintenance of water and wastewater systems

Approximating equilibrium in the digital marketplace

Data remanence and digital forensic investigation for CUDA Graphics Processing Units
Radiometer monitoring system for partial discharge detection in substation

Channel estimation and transmit power control in wireless body area networks

Image-based monitoring of encrustation in the crystallisation process

A highly-efficient memory-compression scheme for GPU-accelerated intrusion detection systems

GLoP: Enabling Massively Parallel Incident Response Through GPU Log Processing

Radiometric location of partial discharge sources for future smart grid

Auction-based network selection in a market-based framework for trading wireless communications services

Design and Implementation of Wireless Sensor Systems

Development and validation of a simulator for wireless data acquisition in gas turbine engine testing

Parameter optimization for LTE handover using an advanced SOM algorithm

An advanced SOM algorithm applied to handover management within LTE

Economics of intelligent selection of wireless access networks in a market-based framework: a game-theoretic approach

Performance simulations of WLAN and Zigbee in electricity substation impulsive noise environments
A self-calibrating partial discharge WSN for condition monitoring in the future smart grid  

Measurements of MIMO-UWB indoor channel  

Policy based mobility and flow management for IPv6 heterogeneous wireless networks  

RAID 6 hardware acceleration  

Economic aspects of intelligent network selection: a game-theoretic approach  

Traffic generation of IEC 61850 sampled values  

Vulnerability of Zigbee to impulsive noise in electricity substations  

Wireless communication networks for gas turbine engine testing  

Estimation of impulsive noise in an electricity substation  

Development of a multiple-input multiple-output ultra-wideband system emulator  

A mobility framework to improve heterogeneous wireless network services  

An optimum network selection solution for multihomed hosts using Hopfield Networks  

Noise amplitude distribution of impulsive noise from measurements in a power substation  

Empirical modelling and simulation of transmission loss between wireless sensor nodes in gas turbine engines  
A channel model for wireless sensor networks in gas turbine engines

Automated protocol selection for energy efficient wSN applications

Proactive route optimization for fast mobile IPv6

Detection of super-high-frequency partial discharge by using neural networks

Characteristics of impulsive noise in electricity substations

Impulsive noise modelling and prediction of its impact on the performance of WLAN receiver

Noise amplitude distribution of impulsive noise from measurements in a power substation

Detection of ultra-wide-band impulsive noise in a 400 kv air insulated electricity substation

Extraction of impulsive noise from measurements in a 400kV electricity substation

QoS-aware network-supported architecture to distribute application flows over multiple network interfaces for B3G users

ZigBee performance in 400 kv air insulated power substation

Design and evaluation of dynamic policy-based flow redirection for multihomed mobile networks

Laboratory assessment of WLAN performance degradation in the presence of impulsive noise

Towards always best connected multi-access: the MULTINET approach
Effect of co-phasing diversity on CDMA downlink capacity

Design and evaluation of flow handoff signalling for multihomed mobile nodes in wireless overlay networks

Policy-based multihoming support in the MULTINET architecture

Multinet: enabler for next generation enterprise wireless services

Interferometric noise characterization of a 2-D time-spreading wavelength-hopping OCDMA network using FBG encoding and decoding

The personal distributed environment

Hybrid user- and network-initiated flow handoff support for multihomed mobile hosts

Interferometric noise characterisation of a 2-D time spreading wavelength Hopping OCDMA networks using FBG encoding/decoding

Mobile communications networks

Leader election in a personal distributed environment

The mobile VCE architecture for the interworking of mobile and broadcast networks

Personal distributed environment in the context of reconfigurability

A personal networking solution

Location privacy and the personal distributed environment
Trust architecture for personal distributed environment

Securing personal distributed environments

Personal distributed environment - securing the dynamic service platforms beyond 3G

A personal distributed environment for future mobile systems

A resource management architecture for future mobile communications systems

A DCA algorithm for indoor personal communications

Comparison of ISMA and DECT-DCS channel access policies for indoor wireless communications systems

Activities

Energies (Journal)
Robert Atkinson (Guest editor), Gordon Morison (Guest editor) & Christos Tachtatzis (Guest editor)
20 Dec 2020

The Challenges in the Implementation of Cloud-based Precision Livestock Management Services Provision
Christopher Davison (Contributor), Andrew Hamilton (Contributor), Robert Atkinson (Contributor), Christos Tachtatzis (Contributor), Walter Michie (Contributor) & Ivan Andonovic (Speaker)
26 Aug 2019 → 30 Aug 2019

European Union Agency for Network and Information Security (Publisher)
Christos Tachtatzis (Editor), Xavier Bellekens (Editor) & Robert Atkinson (Editor)
Dec 2018

Podcast participant: MACRO – The Cisco Innovation Podcast, Revolutionising Natural Disaster Response
Robert Atkinson (Speaker)
3 Oct 2018

Online CPD - Social Benefits of Innovative Lighting
Branka Dimitrijevic (Speaker), Peter Grant (Speaker), Robert Martin (Speaker), Peter Skabara (Speaker) & Robert Atkinson (Speaker)
28 Nov 2016

2015 IEEE 81st Vehicular Technology Conference
Robert Atkinson (Participant)
5 Nov 2015

EU - European Research Council (External organisation)
Robert Atkinson (Member)
14 Mar 2013
International Conference on Wireless Communications and Applications
Robert Atkinson (Member of programme committee)
1 Aug 2011

VTC Fall 2011
Robert Atkinson (Participant)
2011

Scottish Networking Event (SCONE)
Robert Atkinson (Organiser)
Sep 2009 → …

External examiner for PhD vivas at Edinburgh University School of Engineering, and School of Informatics
Robert Atkinson (External Examiner)
Aug 2009 → Apr 2010

EPSRC (Engineering and Physical Sciences Research Council) (External organisation)
Robert Atkinson (Member)
Jan 2009 → …

EPSRC (Engineering and Physical Sciences Research Council) (External organisation)
Robert Atkinson (Member)
Jan 2009 → …