

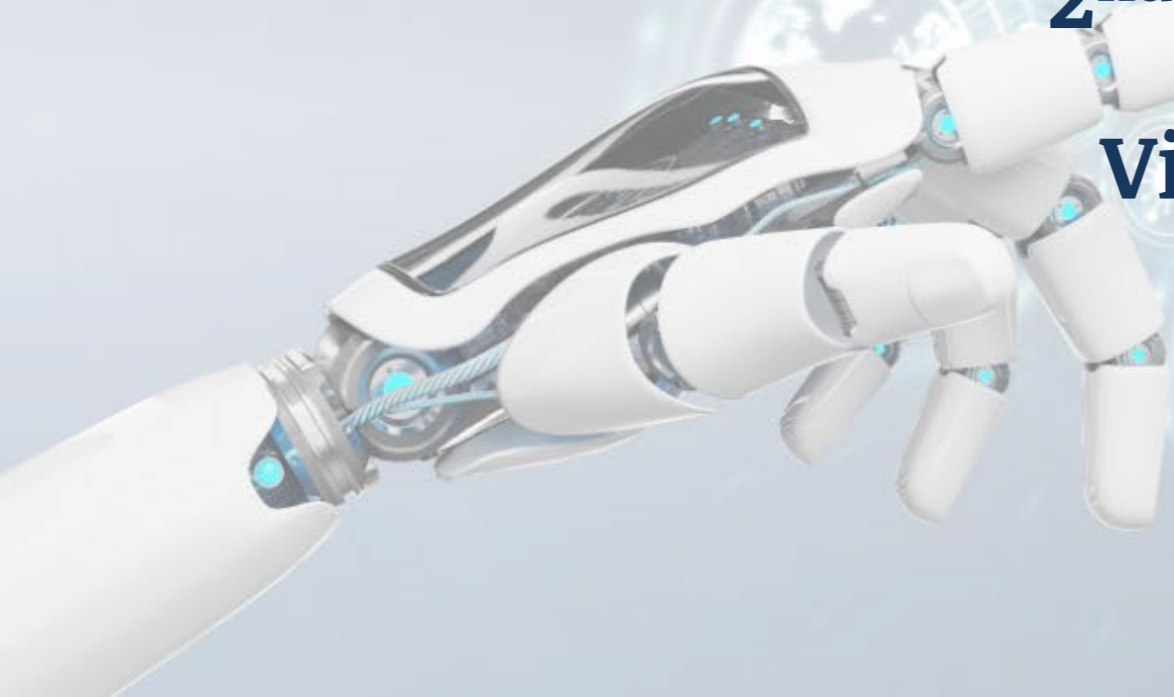


World Institute for
Nuclear Security

Autonomous and Remotely Operated Systems: Benefits and Challenges to Nuclear Security

2nd – 4th April 2019

Vienna, Austria



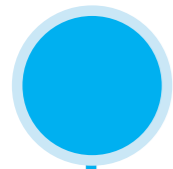


World Institute for
Nuclear Security

WINS: Update and Workshop Objectives

Dr Roger Howsley
Executive Director

Outline



WINS Update



The WINS Academy



Workshop Objectives

The WINS Vision

All nuclear and other radiological materials and facilities are effectively secured by demonstrably competent professionals applying best practice to achieve operational excellence.

The World Institute for Nuclear Security (WINS)

- A not-for-profit NGO based in Vienna, Austria
- Founded in December 2008
- 13 staff – 60% women
- 11 Nationalities
- Annual Budget ~ 3M Euro
- Funded by Governments, Foundations and Industry

The Golden Thread



WINS Membership



Data @ 27 March 2019

WINS Programme



Sharing Operational Experience



Knowledge Centre



Training & Certification



Evaluation

100+

International
Best Practice
Workshops



35

International
Best Practice
Guides



40,000+

Downloads and
distributed
copies of Best
Practice Guides
and Special
Reports



Outline

- WINS Update
- **The WINS Academy**
- Workshop Objectives

Demonstrable Security Management Competence in other Professions



Maritime Security

- [Ship Security Officer](#)
- [SSO Certificate of Proficiency](#)
- [Company Security Officer \(CSO\)](#)
- [Marine Facility Security Officer \(MFSO\)](#)
- [Persons with Security Responsibilities](#)
- [Auditor Course](#)
- [Port Workers Security Awareness Course](#)
- [Other Maritime Security Courses](#)

INTERNATIONAL CIVIL AVIATION ORGANIZATION
A United Nations Specialized Agency

Home | Simulation | Courses & Programs | Registration | Locations

About ICAO | Strategic Objectives | Meetings & Events | Publications | Online Store | Employment

ICAO > Security > ISD Security Home > AVSEC PMC

AVSEC PMC

- ISD Security Home
- Structure
- Assistance
- Training

AVSEC PMC

- ICAO AVSEC Professional Managers
- PMC Schedule
- PMC Flyer
- PMC Statistics
- AVSEC PMC Article
- Contact us

AVSEC PROFESSIONAL MANAGEMENT COURSE (AVSEC PMC)

The **Aviation Security Professional Management Course (PMC)** is the most advanced aviation security training programme in existence today which carries a formal designation (AVSEC PM), it the first of its kind globally.

The programme was developed by the International Civil Aviation Organization (ICAO) in collaboration with the John Molson School of Business at Concordia University in 2004. Its aim is to provide a security middle and senior management personnel with new management skills and a greater understanding of the application of the Standards and Recommended Practices contained in Annex 17 while maintaining a creative and pedagogic philosophy. Emphasis is also placed on the use of the Security Manual (Doc 8973) Restricted.

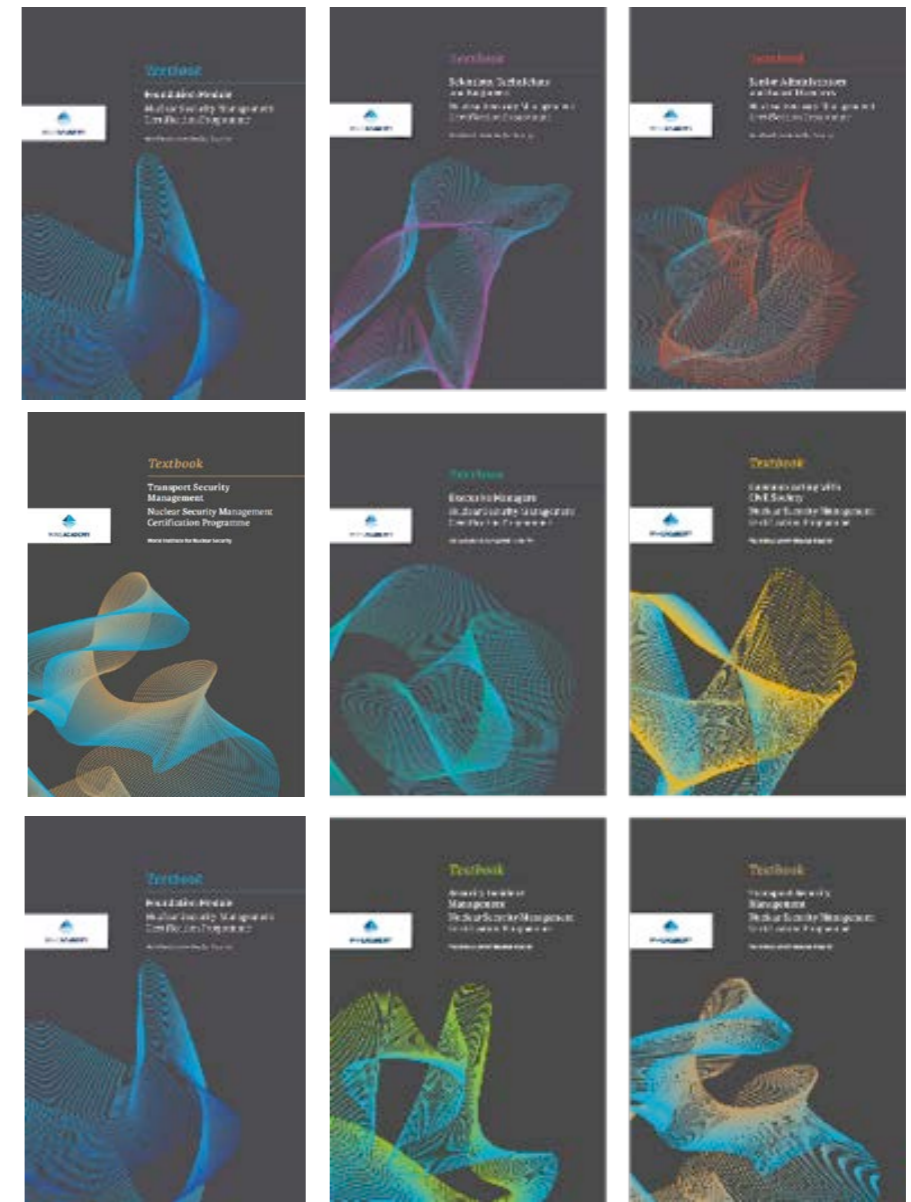
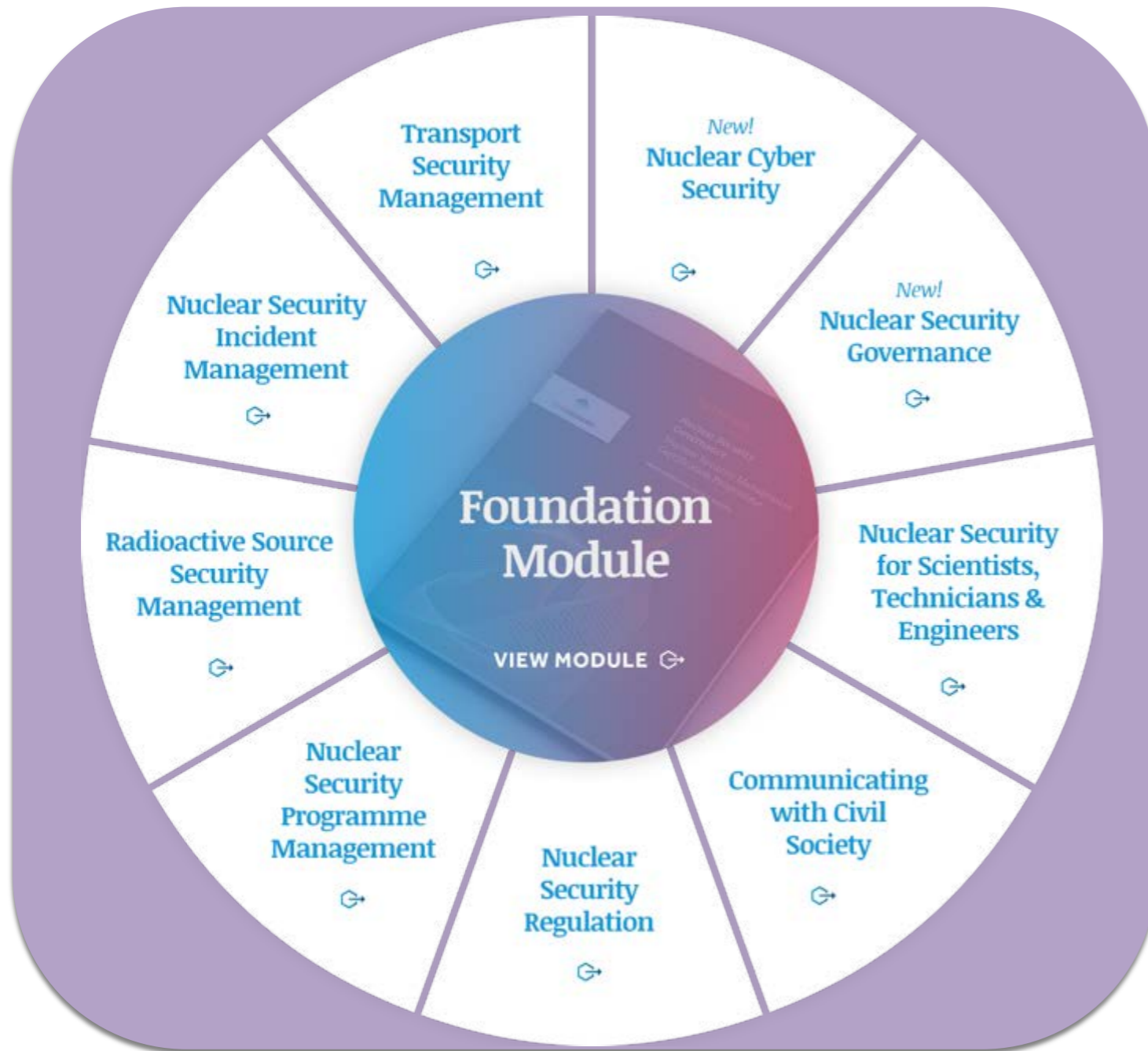
Launch of the WINS Academy 2014

OUR SERVICES

WINS Academy

The WINS Academy is the world's first international certification programme for nuclear security management. The programme is based on a core philosophy that views security as a fundamental aspect of risk management and corporate reputation.

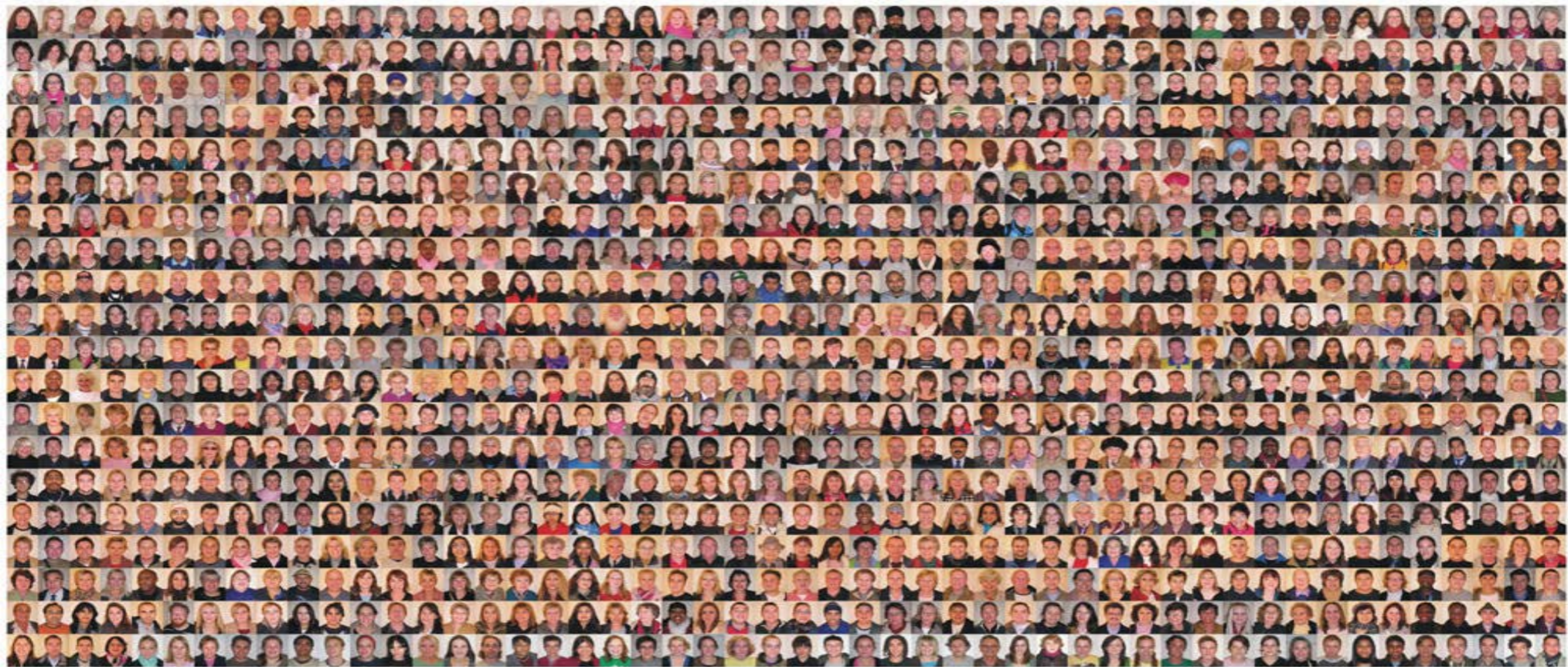
WINS Academy



Academy Statistics

1,341 Participants from **94** Countries

357 Certified Nuclear Security Professionals



Data @ 27 March 2019

Sustaining the Engagement – The WINS Professional Network



79%

of our participants are from developing countries



96%

of our Alumni say that WINS certification has positively impacted their professional image



50%

of our Alumni have received a significant increase in responsibility

WINS Gender Champions Initiative

WINS Programme will focus on identifying and overcoming the barriers to women's greater participation in nuclear security: we need greater diversity to address the evolving threats



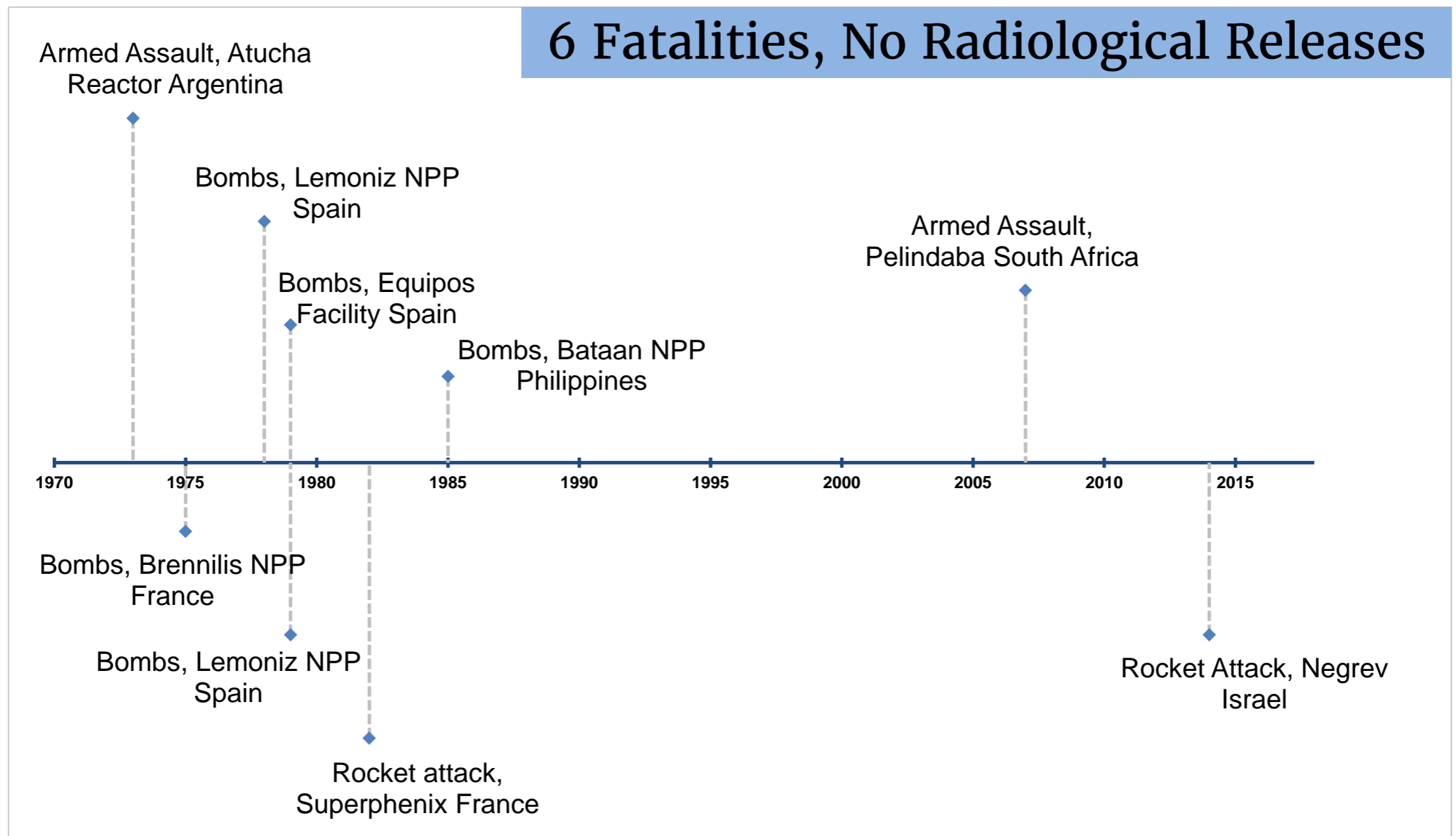
Outline

- **WINS Update**
- **The WINS Academy**
- **Workshop Objectives**

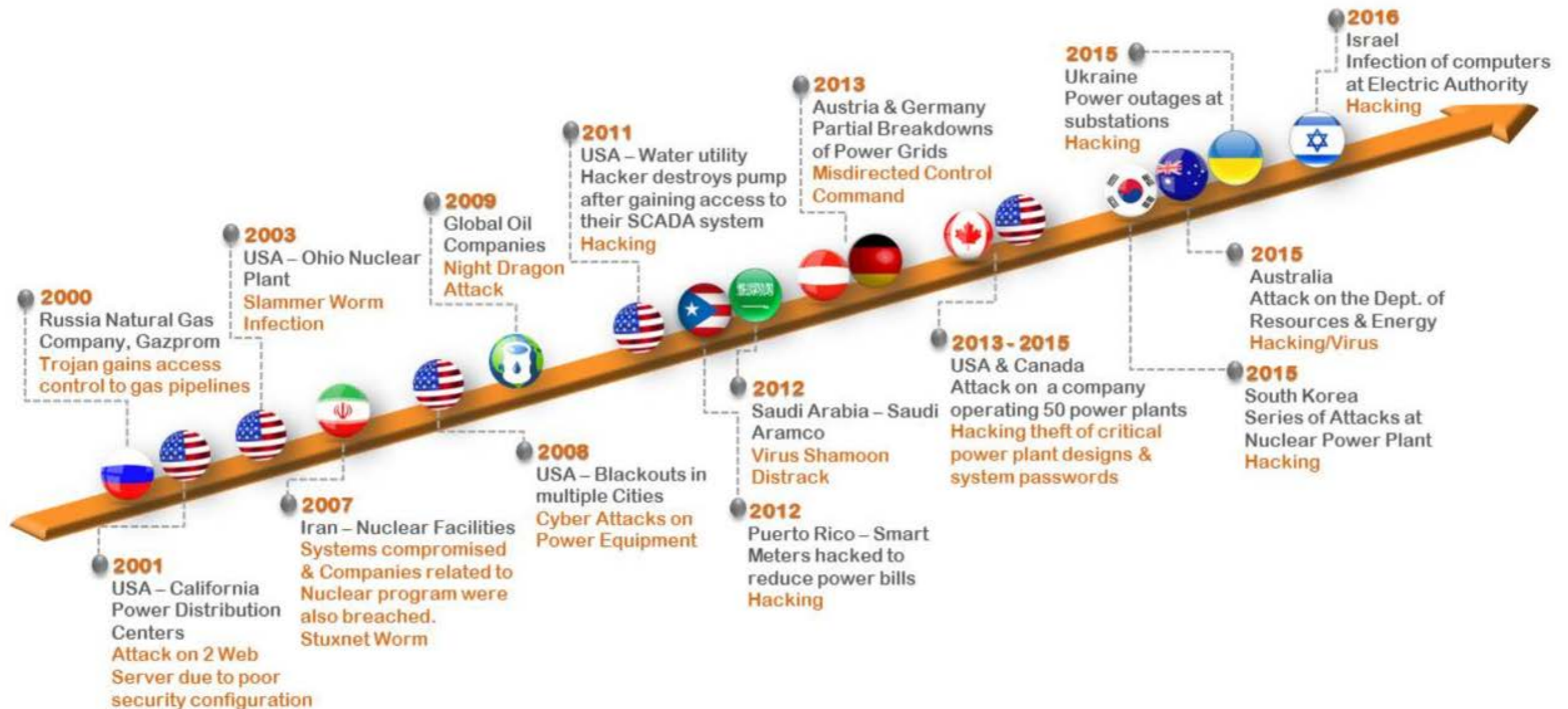
“Predicting the future is easy ... getting it right is the hard part.”

Physical Assaults on Nuclear Facilities: 50 years

6 Fatalities, No Radiological Releases



Cyber Attacks on Industrial Control Systems



A History of the Future of Work

(BBC – 12 March 2018)



HYPE

Unfounded
fears

HOPE

Utopian
predictions





c.370BC

Writing will ruin our memories



"If men learn this, it will implant forgetfulness in their souls; they will cease to exercise memory because they rely on that which is written" said Socrates. We remember his views on this because Plato wrote them down.



16th-17th

Century

**Books will
render us
'confused' and
'barbarous'**



In 1545, Swiss scholar Conrad Gesner complained of a *"confusing and harmful abundance of books"*. In 1685, French scholar Adrien Baillet wrote there was *"reason to fear"* that a *"multitude of books"* would drive us into a *"barbarous"* state.



1888



We'll all retire at 45

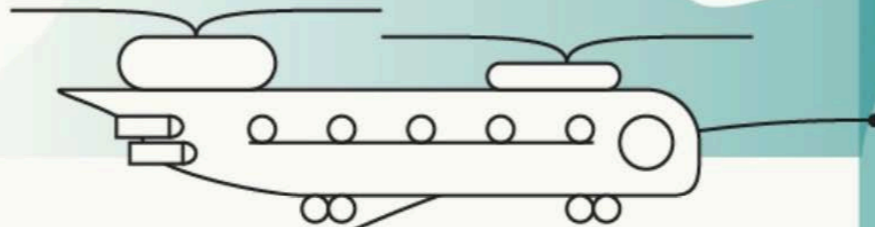
In his utopian novel 'Looking Backward: 2000-1887', Edward Bellamy imagines the year 2000, when *"working hours are short, the vacations regular and that all emulation ceases at forty-five, with the attainment of middle life."*

1930



We'll be working 15-hour weeks

Economist John Maynard Keynes predicted automation would usher in an *"age of leisure and abundance"* within 100 years. *"Everybody will need to do some work if he is to be contented"*, he wrote, but *"three hours a day is quite enough"*.



1950
We'll commute by helicopter



Popular Mechanics magazine envisioned that the commuters of the year 2000 will "go to the city [...] in huge aerial busses that hold 200 passengers. Hundreds of thousands [will] make such journeys twice a day in their own helicopters."



1959

Artificial intelligence will take all our jobs



"The time it will take to develop a really useful artificial brain is 20 years multiplied or divided by 1 1/2", guessed mathematician I.J. Good. "All the problems of science and technology will be handed over to machines and it will no longer be necessary for people to work."

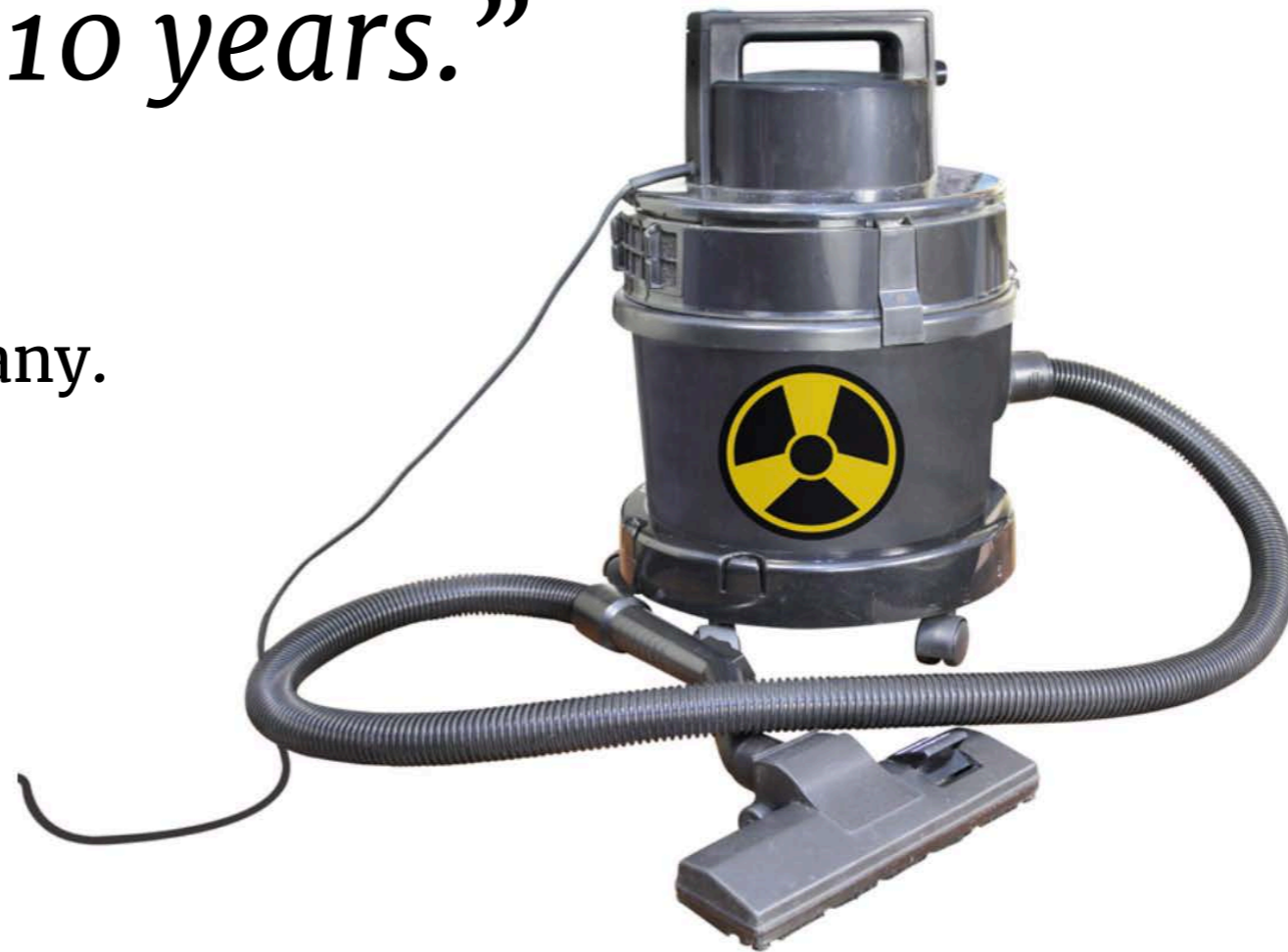
1932: *“There is not the slightest indication that nuclear energy will ever be obtainable. It would mean that the atom would have to be shattered at will.”*

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Albert Einstein.

1955: *"Nuclear powered vacuum cleaners will probably be a reality within 10 years."*

Alex Lewyt, President of the
Lewyt Vacuum Cleaner Company.



1962: Lewyt went bankrupt.

The electronic models had a tendency of shorting out and giving the user a shock which resulted in a number of lawsuits that bankrupted the company.

Agenda

DAY 1 – TUESDAY 2nd April 2019

Keynote presentation: *Keeping Pace with Security Risks and Opportunities* by Edward O’Neil from Duke Energy (USA)

Session 1: The Evolving Threat Landscape and the Intersection between Threats and Technologies – Zachary Kallenborn from Cadmus Group (USA)

Session 2: Advanced Technologies – Introduction to Autonomous and Remotely Operated Systems Relevant to Nuclear Security

Agenda

DAY 2 – WEDNESDAY 3rd April 2019

Session 3: A Comprehensive Review of Autonomous and Remotely Operated Systems For Security:

Biometrics

Drones and drone detection

Remotely operated weapons

Robotics

Modelling and simulation

Agenda

DAY 3 – THURSDAY 4th April 2019 (Morning)

Session 4: Broader Considerations to Adopting Advanced Technologies and Implementing a Business Case for Security

Regulatory, Legal and Ethical issues
When to Adopt New Technology?
Developing a Business Case

Conclusions

Survey Results

- ❑ 80% think that terrorist groups already have the capability to perpetrate attacks on nuclear facilities with advanced technology devices.
- ❑ Around 50% think that there is a clear trend among nuclear organisations to deploy autonomous and remotely operated systems.
- ❑ 70% believe autonomous and remotely operated systems will significantly enhance security arrangements at nuclear facilities.
- ❑ Most of you think that ROWs and drones are the technologies which will have the most significant impact on nuclear security.
- ❑ The main challenges for the effective deployment of autonomous and remotely operated systems will be cybersecurity and regulations.
- ❑ The major advantages that operators will experience when implementing these technologies are reduction of security costs and better security performance.

Thank You for Your Attention.
Enjoy the Workshop!

Learn more at:
www.wins.org



World Institute for
Nuclear Security