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REFLECTING ON THE ILO'S GLOBAL REPORT FOR WORLD DAY FOR SAFETY AND HEALTH AT WORK 2025

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TABLE OF CONTENTS

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ABOUT THE GLOBAL REPORT

World Day for Safety and Health at Work
2025 Global Report
Revolutionizing health and safety:
The role of AI and digitalization at work

- Released on **23 April 2025**
  - Part I: How digitalization is transforming safety and health at work
  - Part II: Addressing OSH in the Digital Era: Policies, Gaps and Collaborative Efforts

- Citing emerging technologies that are improving worker health and well-being

- Highlighting the need for proactive policies to address new risks.

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HOW DIGITALIZATION IS TRANSFORMING SAFETY AND HEALTH AT WORK

Digitalization and automation enhance safety and health by mitigating risks and improving working conditions.

IMPROVEMENT	POTENTIAL RISKS TO BE MANAGED
Automation and advanced robotics are streamlining tasks and reducing exposure to hazards.	Safety, ergonomic, physical and psychosocial risks.
Smart OSH tools and monitoring systems enable real-time hazard detection and proactive safety management.	Usability and fit issues, privacy concerns, stress from constant monitoring.
Extended and virtual reality technologies are transforming worker training through immersive simulations.	Visibility, balance issues, visual strain, cognitive overload.
Algorithmic management of work optimizes task allocation and improves work-life balance.	Increased surveillance and monitoring, work intensification and stress, fairness and bias issue.
Digitalization is changing work arrangements such as telework and platform work offer flexibility but also posing new challenges.	Physical and psychosocial risk

Integrating new technologies into *risk management for improved OSH*

More effective ↑	**Elimination** Physically remove the hazard and avoid high-risk technology	Replace physical entry with drones or robotic crawlers	Robotic process automation for repetitive work	Robotics to remove workers from hazardous tasks and environments
	Substitution Use safer alternatives	Immersive virtual reality simulations for skill development	Exoskeletons to ease heavy manual handling Collaborative robots to share workload	Nano-engineered materials to replace hazardous substance with safer alternatives
	Engineering controls Isolate people from the hazard using safeguards, automation and barriers	Real-time monitoring systems for continuous tracking of environmental conditions inside confined spaces	Computer vision to identify ergonomic risks	Sensors and wearable devices to monitor worker exposures to hazards in real time
	Administrative controls Change the way people work through policies, scheduling and training	Digital work permit systems for assessment and authorization before entry	Gamification and simulation of ergonomic training to engage and educate workers on best practices	VR and AR training for hazard recognition and emergency response
Less effective ↓	**PPE** Protect the worker with PPE as a last resort	Wearable gas detectors for continuous monitoring and immediate alerts	Smart PPE with built-in sensors to detect and warn of incorrect posture or overexertion	Smart PPE with embedded sensors to monitor worker vital signs

Source: Safetytech Accelerator (2024)

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ADDRESSING OSH IN THE DIGITAL ERA

- Existing OSH frameworks are crucial for safeguarding workers' rights in the digital era.
- Governments are integrating OSH considerations into policies on AI and digital transition.
- Legal frameworks are being updated to address digital risks, including robotics safety, the right to disconnect, and remote/platform work protections.
- Voluntary standards, guidance, awareness campaigns, training, and research are vital for promoting safe technology use.
- Risk assessment and management are essential for proactively addressing emerging digital risks.
- Workers and their representatives must be actively involved in the design, implementation, and monitoring of digital technologies.

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NOTABLE EXCERPTS FROM THE GLOBAL REPORT

“In mining, construction, and manufacturing, they enable workers to supervise hazardous operations remotely, reducing exposure to risks such as carcinogenic welding fumes, bomb disposal and chemical spills”

“Digitalization can enhance OSH by reducing hazardous exposures, improving risk detection and prevention, streamlining processes and optimizing work organization to minimize both physical and mental workloads, among other benefits.”

“In China, drones have been widely deployed to spray pesticides, with over 200,000 drones carrying out operations in 2021.”

“During COVID-19, Haddadin et al. (2024) developed an autonomous swab robot that safely performed screenings without human intervention. Tested on 52 patients in Germany, it demonstrated high accuracy, strong acceptance rates and the ability to conduct up to 300 tests per day per robot.”

“Wearable and smart devices, if improperly designed, may lead to physical strain, while unmanned aerial vehicles (UAVs), such as drones, and head-mounted displays can pose risks of injury, loss of balance and visual hazards.”

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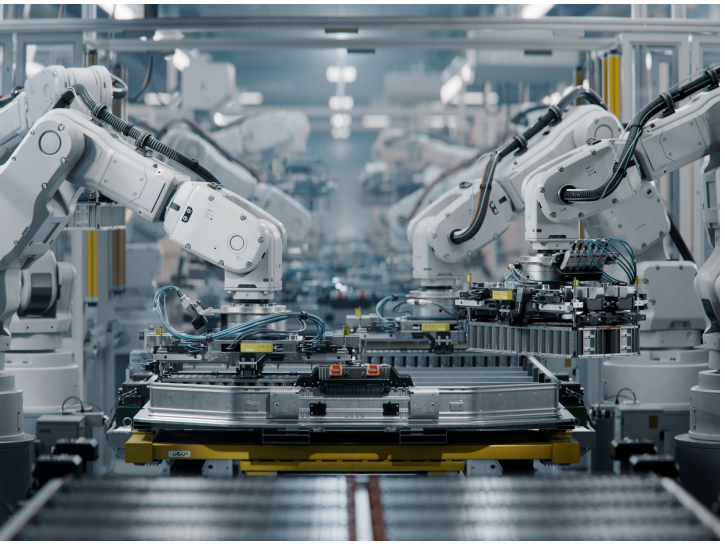
NOTABLE EXCERPTS FROM THE GLOBAL REPORT



“Dubai’s AI Ethics Principles and Guidelines in the United Arab Emirates and Singapore’s Model AI Governance Framework emphasize transparency, accountability and fairness in AI applications.”

“In Japan, the Robotics Safety and Worker Training Programme by the Japan Iron and Steel Federation has issued requirements that operators of robot services or robot service providers should observe.”

“Key areas of legal development include updating robotics safety regulations and human-robot interaction protocols to mitigate risks in collaborative work environments.”

“Digital tools like AI-driven analytics, real-time monitoring, and predictive modelling can enhance risk assessments and OSH strategies but must complement - not replace - human judgement in OSH practices.”

“The social partners play a key role in shaping digitalization policies by participating in decision-making, negotiating collective agreements and leading awareness-raising initiatives to promote fair and safe technology adoption.”

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BRUNEI DARUSSALAM'S OSH LANDSCAPE

LEGAL & REGULATORY FRAMEWORK

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- Workplace Safety and Health Cap, 227
- Radiation Protection Act, Cap 228

Department of Labour, Ministry of Home Affairs

- Workmen's Compensation Act, Cap 74
- Employment Act, Cap 278

Occupational Health Division, Ministry of Health
Occupational Health Services

48 Active Approved Training Providers

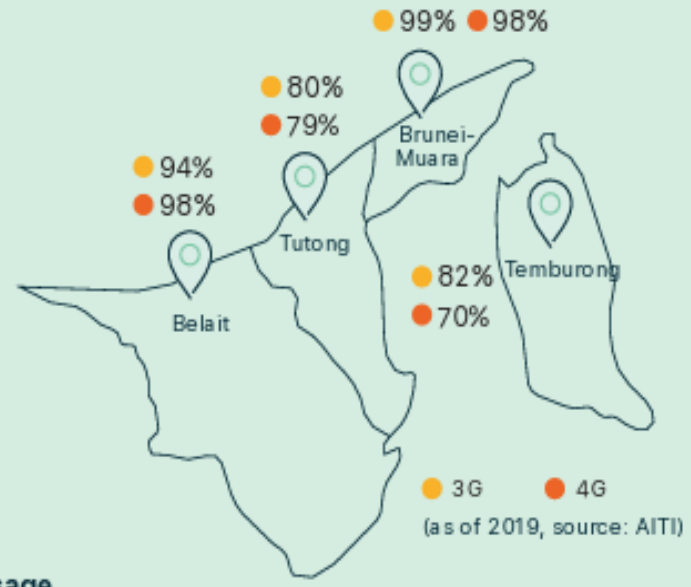
5 Safety & Health Training Course Syllabus

PERSONNEL QUALIFICATION	WSH OFFICER	WSH CO-ORDINATOR	AUTHORISED EXAMINER (LIFTING)
Total No Registered	463	187	26

Mobile phone usage

134%

subscription of mobile service per 100 inhabitants in Brunei Darussalam. (as of 2019, source: AITI)



(as of 2019, source: AITI)

Internet Broadband Usage

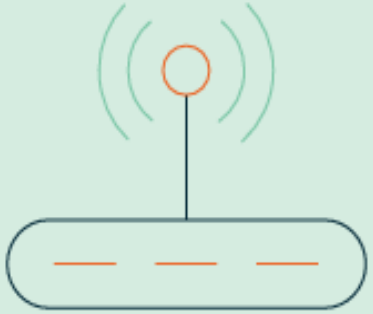
95%

of individuals use the Internet which is measured by individuals' daily usage as per the Brunei Darussalam ICT Household Report 2019.

Mobile Broadband Service Coverage

95%

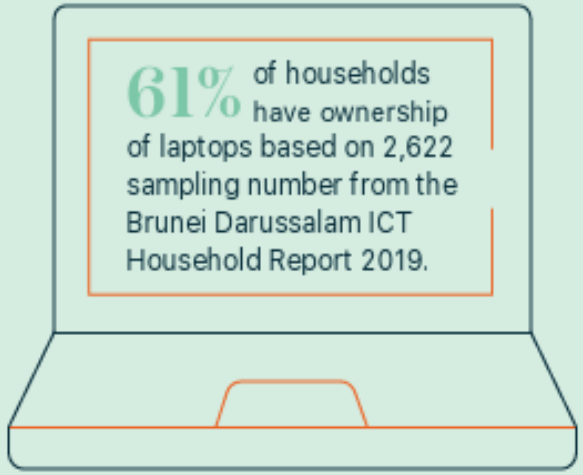
of total population covered by 4G network - mobile broadband. (as of 2019, source: AITI)



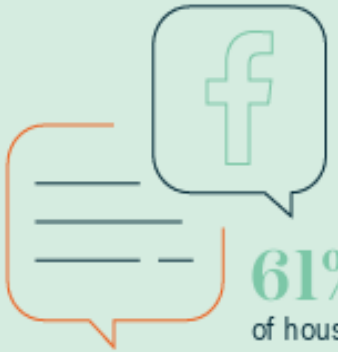
Fixed Broadband Subscription

50% subscription of fixed broadband service per 100 households and businesses in Brunei Darussalam. (as of 2019, source: AITI)

Household with laptop



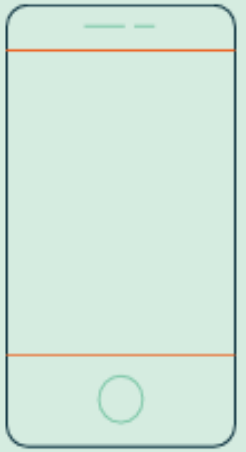
61% of households have ownership of laptops based on 2,622 sampling number from the Brunei Darussalam ICT Household Report 2019.



Household use Facebook

61%

of household use Facebook based on 2,622 sampling number from Brunei Darussalam ICT Household Report 2019.



Smartphone

88%

of households own smartphones in Brunei Darussalam based on a 2,622 sampling number from the Brunei Darussalam ICT Household Report 2019.

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POTENTIAL CHALLENGES FOR AI IN OSH IN BRUNEI

- Managing cybersecurity threats and privacy in monitoring-solutions
- Addressing skills gap to effectively use AI tech
- Relatively new context requiring more evidence-based study
  - Safety risks of mechanical failures
  - Ergonomic and design of wearable tech
  - Job insecurity
  - Stress in monitoring-solutions
- Bridging legislative and enforcement gaps

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POTENTIAL OPPORTUNITIES FOR AI IN OSH IN BRUNEI

Facilitating a new context of discussion between technologists and OSH practitioners

Exploring new safety and health considerations for new job roles: what does protection look like for digital work?

Manifest the **hierarchy of controls**:

- AI systems to monitor working conditions (heat, noise, air quality)
- VR training to allow practice without high-risk exposure
- Automation of dangerous tasks
- AI hazard prediction and spotting

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KEY TAKEAWAYS AND MOVING FORWARD

- ✓ Research (and maybe piloting) is needed to fully understand the impact of new technologies on safety and health
- ✓ Collaboration between industry, policy and workers will be key to building understanding and culture
- ✓ Signal for newer guidance notes, frameworks and enforcement approaches
- ✓ Workplace Safety and Health Conference (WSHCON) 2025

SHENA

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Join the Q&A at Slido.com

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SHENA

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كصيحتن دان عالم سكيتر

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THANK YOU