



AIS
5G

THE FUTURE IS YOURS

SUSTAINABILITY REPORT 2020 | ADVANCED INFO SERVICE PUBLIC COMPANY LIMITED



“Network for...THAIs”



Economy

Bt76mn revenue from innovation



638 groups

joined in testing prototype & sought expert guidance via AIS

116 groups

connected their services to AIS API

open

24x7 Cyber Security Operation Center
for enterprise customers

Society

Thailand's Best Employers 2020

by Business media international and
HR Asia Best Companies to work for in Asia

Develop system on Aor Sor Mor App to

**Screen & Monitor
COVID-19**



492 schools

participating in DQ program

Environment



**THAIS SAY NO TO
E-WASTE**

2,400 drop points

nationwide

Collected E-waste

114,800 pieces



Reduced papers from

6.7mn accounts using e-bill





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Message from Chairman

7 STRATEGIES FOR SUSTAINABLE DEVELOPMENT



AIS is committed to operate business sustainably in support of a transition to a digital economy, providing guidance on cyber wellness and promote awareness of the proper E-Waste disposal, serving as a clear model in the telecommunications industry in support of national development across all sectors for sustainable growth. ”

Mr. Kan Trakulhoon

Chairman of the Board of Directors



The COVID-19 pandemic inflicted major impacts on the economic sector, predominantly businesses such as hotels, airlines, restaurants and retailers, and also impaired the environment, as government imposed policies to stay home and avoid travel resulting in staggering accumulation of household waste and biohazardous garbage such as hygienic face masks. Without proper management, these wastes pose direct threat to the environment. The pandemic clearly altered daily life, making everyone mindful of social distancing as a means to halting viral infection. The situation led the entire world into the New Normal whereby people are more focused on self-care and safety of families and friends. This New Normal accelerated interests in digital solutions for both business and daily life as it facilitated communication between family members, work from home, domestic and international business proceedings and education, leading to the birth of new businesses responsive to digital life.

Despite direct effects to our business across the board, AIS remained dedicated and committed to conducting operations within the Sustainable Development framework, viewing all risks and opportunities presented upon through the scope of the “7 Strategies for Sustainable Development”, which encompasses the economic, social and environmental dimensions. AIS strived to develop digital innovations for telecommunications security and customer data privacy, develop and care for its staff in a holistic manner, create value in community and social access to technology, support cyberwellness, be energy efficient to reduce carbon emissions and appropriately dispose of waste. Major developments on these fronts by AIS in 2020 include:

- **Expanded 5G network** for coverage across the country in demand satisfaction among the Thai people and in support of a transition to a digital economy as well as to allow the potentials of 5G to be concretely utilized against national crises. AIS used 5G technology to support medical care and public health by setting up 5G networks in 158 hospitals in Bangkok and provincetesting and treating COVID-19 patients, brought together digital experts to develop 5G Telemedicine robot and medical service solutions based on hospital needs and delivered 23 new AIS ROBOT FOR CARE units to 22 hospitals handling COVID-19 patients including Chulalongkorn Hospital, Rajvithi Hospital and Siriraj Hospital. These robots interacted with patients substituting medical staff to reduce contact. AIS also fortified its network and introduced digital solutions in support of effective work from home, ensuring business continuity of commercial organizations, enhancing cybersecurity which has become a major topic of consideration alongside growth in digital access to personal and corporate data. AIS maintained 24-hour cybersecurity systems and personnel for the confidence of both its customers and corporate clients.
- **Resumed the Aunjai Cyber project with the objective of raising awareness and fostering immunity to cyber threats**, promoting Digital Quotient (DQ) through online courses for youths and supported digital tools for filtering inappropriate online content while providing guidance on cyberwellness. During the stay at home period prompted by the pandemic, AIS offered over 35,000 privileges to attend online DQ courses at no cost and organized campaign to mark Stop Cyberbullying Day, inviting youths to exchange experiences on cyberbullying and providing guidance on cyber safety using DQ, urging young people to be aware, rationalize and ready to cope with cyberbullying.

- **Instigated the “Thais Say No to E-Waste” project** by volunteering to lead efforts to spur Thai people into properly disposing electronic waste. AIS entered E-Waste into the appropriate recycling process by collaborating with partners and expanded E-Waste receptacle locations to 2,300 sites nationwide. The project will evolve along two strategies: 1) Collaborate with partners to add more channels through which Thai people can conveniently dispose of E-Waste 2) Promote awareness of the importance of proper E-Waste disposal and encourage participation in the project through year-round activities.

Through its devotion and commitment to conduct business sustainably in all dimensions, AIS was listed on domestic and international sustainability indexes, the Dow Jones’ World Index and Emerging Market Index for 2020 in the telecommunications industry category for the second consecutive year, the FTSE 4 Good Emerging Index for the sixth consecutive year, the SET Thailand Sustainability Investment (THIS) list for the sixth year and on ESG100 as a registered company showing excellence in environmental, social and governance work by Thaipat Institute for the sixth year.

AIS is committed to operate business sustainably with concern towards its stakeholders, to create value in the business, social and environmental dimensions in compliance to Good Governance and to support the United Nations Sustainable Development Goals, serving as a clear model in the telecommunications industry in support of national development across all sectors, for mutual sustainable growth.

AN AFFIRMATION OF OUR DETERMINATION TOWARDS SUSTAINABLE BUSINESS

Global Level

Dow Jones Sustainability Indices (DJSI) 2020

World and Emerging Indices and Received the Sustainability Award Silver Class 2021

FTSE 4 Good Index Series

6th Consecutive Years

National Level

Thailand Sustainability Investment (THSI) 2020

6th Consecutive Years

ESG 100

6th Consecutive Years



Member of
**Dow Jones
Sustainability Indices**
Powered by the S&P Global CSA

Sustainability Award
Silver Class 2021
S&P Global



Business Overview

For more than three decades, AIS has been providing telecommunication infrastructure to Thai society.

Starting in 1990 under collaborative contract or concessionaries, Operators were granted the right to utilize state frequencies under the 25-year Built-Transfer-Operate (BTO) agreement. In 2010, The National Broadcasting and Telecommunications Commission (NBTC), government agency in regulating broadcasting and telecommunication, was established and began permitting frequency license. The licensing scheme was a major turning point for the telecommunications industry in Thailand and supports fair competition as well as the development of new technologies.

Vision

“To become the most-admired Digital Life Service Provider in Thailand”

Missions



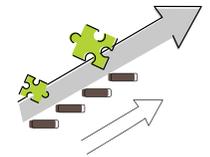
Deliver superior products and services to enrich people’s daily lives and to improve enterprise capabilities and efficiency.



Enhance customer intimacy through the best customer experience.



Drive intrapreneurship and employees’ professionalism, and promote a positive, lively and agile work culture.



Build win-win growth to all stakeholders.

AIS, the Digital Life Service Provider

We are a “Digital Life Service Provider” operating three core businesses, namely



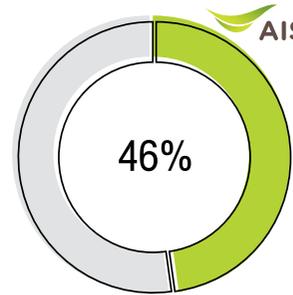
1.

Mobile Phone Services with 5G, 4G, 3G and 2G technology under the brand “AIS”, provides monthly subscription service (AIS Postpaid) and top-up service (AIS One2Call) as well as international calls and roaming with network partners in over 229 nations worldwide.

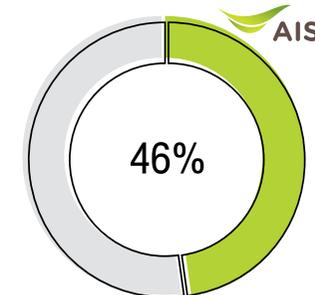
2. **Fixed Broadband Services** provides high-speed home internet utilizing FTTx fiber optics under the brand “AIS Fibre”
3. **Digital Services** extends from mobile phone and high-speed internet services, focusing on creating value-added digital services and aiming to be new revenue source in the medium and long term in anticipation of a change in consumer behaviors and technology.

In 2020, AIS’s total assets were valued at Baht 350,171 million with a market capitalization of Baht 523,349 million, ranked 5th on the Stock Exchange of Thailand.

Leading the Mobile Market



Revenue Market Share in 2020



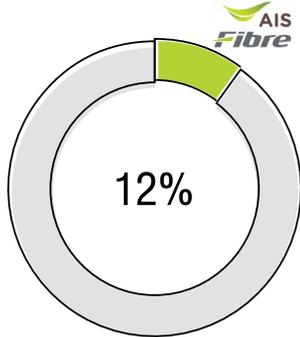
Subscriber Market Share in 2020

As of ending 2020, AIS remained the largest mobile operator in Thailand, with a revenue market share of 46%, and a total of 41.1 million subscribers nationwide. The mobile phone services revenue still accounting for more than 68% of total revenue. AIS provides quality services on 5G, 4G, 3G and 2G technology using frequency bands of 2600, 2100, 1800, 900 MHz for a total of 220 MHz (2x60 MHz on FDD technology and 100 MHz on TDD technology) which 190 MHz is under license granted by NBTC and another 2x15 MHz is under a TOT partnership agreement. Currently, AIS’s mobile network covers over 98%

of country’s population.

Participating in the NBTC spectrum auction in Feb 2020, AIS was able to secure the largest additional bandwidth in the industry, which will shore up its leadership both in terms of service quality and capability to provide 5G. AIS has launched 5G service and is expanding the coverage across all 77 provinces of Thailand, initially emphasizing areas with high demand for data and prioritizing industrial estates as to meet the different demands of corporate clients.

Growing in the Fixed Broadband Market



Subscriber Market Share in 2020

AIS started its fixed broadband business under the brand “AIS Fibre” in 2015, with the goal of creating a new source of revenue by leveraging the established fibre network and the subscriber base from the Company’s mobile business. Currently, AIS Fibre is available in 77 cities, covering 8 million households. AIS Fibre has penetrated the market using its strength in providing FTTH technology to connect households to the internet and is ready to support existing ADSL users wishing to upgrade to higher quality technology and the superior speed of up to 1 Gbps. Fixed broadband revenue in 2020 accounting for 4% of total service revenue. Currently, the total number of subscribers is 1,136,900, accounting for more than 12% of the fixed broadband subscriber market share.

Building on Core Businesses with Digital Services

Digital Services involves the development of services using digital technology in a variety of formats, including networks, service platforms and solutions, in order to create digital services for both enterprises and consumers. This is achieved via cooperation with our partners and the development of an integrated business ecosystem in which we grow and succeed together. AIS is currently focused on 5 main areas of business. These are VDO Platform, Business Cloud, Mobile Money, Internet of Things (IoT), and other digital platform services. Our digital services are an important propeller enabling AIS to access new sources of revenue in the future in addition to current mobile internet charges. It also allows AIS to be an integrated player via the convergence of products and services from our three core businesses.

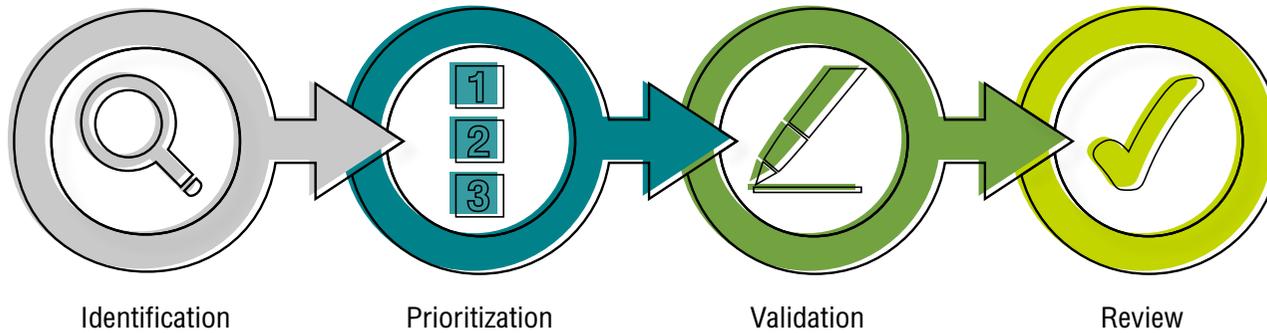
Operating Under Licenses Regulated by the NBTC

The majority of AIS’s businesses, particularly the mobile phone and fixed broadband businesses, operate under the regulation of the National Broadcast and Telecom Commission (NBTC), which is the regulatory authority formed in accordance with the Frequency Allocation Act 2010. AIS, through a subsidiary, was granted a telecommunications business license, such as 2600, 2100, 1800 and 900MHz spectrum licenses with an average license life of 15 years. At the end of spectrum license, NBTC will redistribute spectrum license through auction.

AIS is mandated to pay the license fee, Universal Service Obligation (USO) fees, and numbering fees to the NBTC amounting to around 4% of service revenue per year.

Material Topics for Business Sustainability (GRI 102-46, GRI 102-47)

Process for Defining Material Topics



1. Identification

AIS reviewed and compared domestic and international material topics it identified in 2019, such as the Dow Jones Sustainability Indices (DJSI), and added topics pertinent to the telecommunications industry to a list presented to the Sustainability Development Committee and top managers for their consideration and adjustment of strategies for better coordination with operational plans.

2. Prioritization

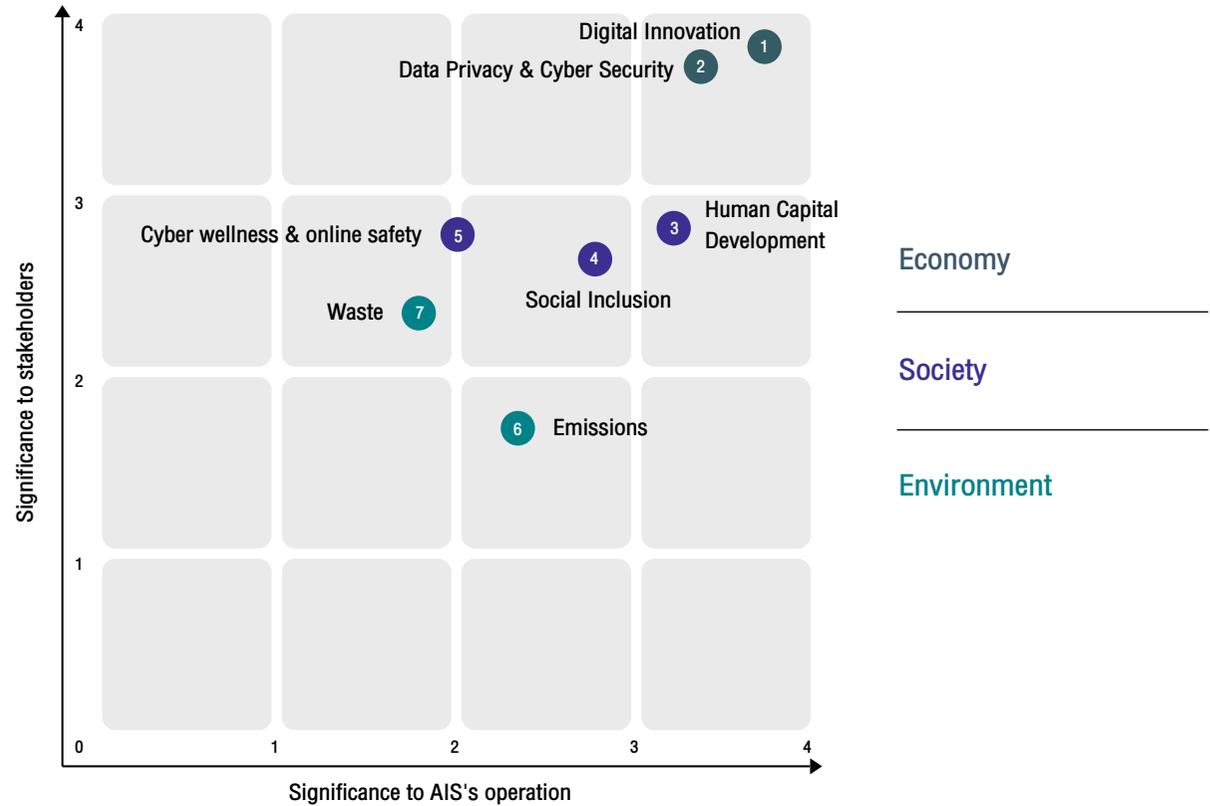
AIS maintains processes for defining material topics of sustainability internally and externally

- **Internal perspective**

Organize meetings with executives and top management to collect opinions and receive guidance on short and long term material topics at AIS while also setting strategies, objectives and operational plans in line with material topics to sustainability.

- **External perspective**

Collect views from stakeholders; community and society, customers, corporate customers, partners, shareholders and investors, via discussions and by phone to uncover prioritized topics and expectations for AIS as well as to set operational guidelines for effectively responding to stakeholders.



Economic Dimension

Aspiration	Challenge	Opportunity	Scope and Boundary		Contribution to UN SDGs
			Internal	External	
Digital Innovation					
Creating products and services through digital innovation that elevate life in Thailand and support the business sector	<ul style="list-style-type: none"> Responding to the Thailand 4.0 policy Survival in the Digital Era Competitiveness 	<ul style="list-style-type: none"> New revenue sources New ways to add value 	<ul style="list-style-type: none"> Policies and Strategies for Promoting Innovation 	<ul style="list-style-type: none"> Collaboration with state agencies and educational institutions AIS theStartUp AIS Playgrounds 	
Data Privacy & Cyber Security					
Develop data privacy and cyber security systems	<ul style="list-style-type: none"> Compliance with GDPR and the Personal Data Privacy Act of the National Broadcast and Telecommunications Commission (NBTC) Customers confidence Detriment to company reputation Loss of business contracts 	<ul style="list-style-type: none"> Revenue growth from consumer confidence New revenue sources e.g. cyber security systems 	<ul style="list-style-type: none"> Policies and strategies for cyber security Customer data privacy policies Customer data management systems 	<ul style="list-style-type: none"> Retailers Customers 	

Social Dimension

Aspiration	Challenge	Opportunity	Scope and Boundary		Contribution to UN SDGs
			Internal	External	
Human Capital Development					
Drive AIS' human capital pursue new strategic growth area focusing on digital business	<ul style="list-style-type: none"> Lack of employees with new abilities needed to foster growth 	<ul style="list-style-type: none"> Enhancement of employee abilities and capabilities New ability talent attraction 	<ul style="list-style-type: none"> Human resource management policies AIS Academy AIS wellness program Personnel development strategies and programs 	<ul style="list-style-type: none"> Partners 	
Social Inclusion					
Elevate life in communities and reduce social inequality through basic infrastructure and digital solutions	<ul style="list-style-type: none"> Responding to Thailand 4.0 policy Disputes with communities Rental contract extensions 	<ul style="list-style-type: none"> Safeguard against customer losses to competitors and indirect strengthening of bonds with customers Closer ties and insights into customers provide opportunities to present more responsive products and services 	<ul style="list-style-type: none"> Innovations for enhanced life quality, present and future products and services Network coverage 	<ul style="list-style-type: none"> Communities and society Business partners 	
Cyber wellness and online safety					
Be a brand that promotes appropriate and safe use of the internet and social media	<ul style="list-style-type: none"> Detriment to company reputation 	<ul style="list-style-type: none"> Leadership in cyber wellness and online safety Customer relations enhancement 	<ul style="list-style-type: none"> Develop new cyber wellness and online safety products and services Online safety campaign Promotion and advertising 	<ul style="list-style-type: none"> Customers Communities and society 	

Environmental Dimension

Aspiration	Challenge	Opportunity	Scope and Boundary		Contribution to UN SDGs
			Internal	External	
Emissions					
Reduce carbon emissions through efficient business operations and promotion of renewable energy	<ul style="list-style-type: none"> Compliance with the COP21 Paris Agreement and Thailand's Nationally Determined Contribution Future GHG taxation 	<ul style="list-style-type: none"> New revenue sources from Cloud products and services that reduce GHG emissions New revenue sources from IOT e.g. climate change tracking systems 	<ul style="list-style-type: none"> Environmental policies and environmental management measures Development of products and services that reduce paper usage 	-	
Waste					
Reduce and recycle waste from operations, promote proper disposal of electronic waste by the Thai people	<ul style="list-style-type: none"> Compliance with Electronic Product and Equipment Disposal Act Detriment to company reputation 	-	<ul style="list-style-type: none"> Environmental policies and environmental management measures 	<ul style="list-style-type: none"> Customers and Public Business Partners 	

3. Validation

A report of material topics is submitted to executives of the Sustainable Development Committee chaired by the Chief Executive Officer for approval and to the Sustainable Development Committee and Board of Director as well as included in the Sustainable Business Report and online ^(GRI 102-32)

4. Review

AIS has prepared a review process for once this report has been publicized to stakeholders so that feedback and recommendations for further sustainable development as well as future reports may be collected.

Stakeholder Engagement ^(GRI 102-40, GRI 102-43, GRI 102-44)

Stakeholder group	Channel and frequency	Expectations	Our actions
<p>Community and society</p> 	<ul style="list-style-type: none"> Community relations agencies (Daily) Complaint centers (Daily) 	<ul style="list-style-type: none"> Quality telecommunications services covering local communities, modern technology for the betterment of community life through E-Commerce, enhance agriculture, etc. Health safety from magnetic fields generated by signal from network towers General support and aid, natural disaster response, emergency aid etc. 	<ul style="list-style-type: none"> A mobile network covering 98 percent of the population, a broadband network covering over 7 million households in more than 50 provinces and an array of packages at different price points Support for community quality of life, adding value to technological access via the Aor Sor Mor health volunteer program combating pandemics, support for digital intelligence and skills to enhance online marketing by community enterprises, promotion of online safety and appropriate usage Provision of knowledge and understanding to communities and their leaders on safety from magnetic fields generated by signal towers, a system for fielding complaints and demands and addressing concerns Support for communities during times of disaster i.e. floods, cold snaps and for occasions i.e. Children's Day, local holidays, etc.

Stakeholder group	Channel and frequency	Expectations	Our actions
<p>Customers</p> 	<ul style="list-style-type: none"> AIS Call Center is the core channel for evaluating customer satisfaction and utilizes the IVR automated chatbot to field feedback, suggestions and complaints (Daily) Contact center at 08-0000-9263 (Daily) 	<ul style="list-style-type: none"> Maximum personal data security Network and service quality, ease of contact and access to service via varied channels Personnel and service system are capable, able to provide accurate information and guidance, act on claims and follow up until completion of service within set period, keep customers updated on progress 	<ul style="list-style-type: none"> Formation of a risk assessment and management committee that sets strategies and policies for cyber security and data privacy utilizing a cyber security committee and data protection division, training for personnel on data protection and regulation of access. Transparent safety protocols and punishments. Procedure for regular monitoring and measuring of signal strength, use of IVR: Interactive Voice Response to reduce customer wait times and facilitate voice commands, automated responses and product promotion, service available via Email and social networks Use of E-Learning for around the clock training of personnel Enhancement to work processes reducing processing time, allowing customers to view status of processes via automated system
<p>Corporate customers</p> 	<ul style="list-style-type: none"> Evaluation of customer satisfaction via channels such as the corporate clients' sales department, AIS Call Center, ICT Service Desk (technical guidance) and online channels i.e. E-Business Portal (1 time per month) Channels for fielding complaints and suggestions i.e. AIS Call Center, AIS Business website (Daily) 	<ul style="list-style-type: none"> Quality of products and services i.e. network coverage, stability and speed of data connections, varied business solutions, after sales service, efficient resolution of problems Varied services meeting different client demands, responsiveness to New Normal, ability to enhance business efficacy and facilitate adaptation to changing contexts Strict and standards meeting data privacy protection 	<ul style="list-style-type: none"> Constant development of the 4G network, regular evaluation of signal integrity, introduction of 5G technology in 2020, development of fiber internet for high speed service Establishment of the 24x7 Cyber Security Operation Center (CSOC). Approval under the ISO27001 Information Security Management System (ISMS), Payment Card Industry Data Security Standard (PCI DSS) and more. Development of new cloud, ICT, cyber security and IoT services in response to demands for greater business flexibility and security Worthwhile promotions and applications, solutions and equipment for New Normal business operation, privileges for corporate clients including product and service discounts, free trials and cost reductions under the Biz Up program Development of digital channels supporting faster, more efficient sales and customer service including online product and service sales, billing, electronic receipts, payment and appointing AIS to carry out withholding tax deduction online

Stakeholder group	Channel and frequency	Expectations	Our actions
<p>Partners</p> 	<ul style="list-style-type: none"> • Trade Partner satisfaction evaluation (1 time per year) • Representatives of personnel who contact customers (Daily) • Distribution channel applications and websites (Daily) • Annual meeting with trade partners (1-2 times per year) • Interviews (1 time per year) 	<ul style="list-style-type: none"> • Expand alongside AIS to reach greater array of customers • Fair business dealings by AIS • Increased connection to society by AIS 	<ul style="list-style-type: none"> • Support for partners to enhance their ability to distribute products using broadband internet as to increase their revenue • Creation of standards for effective cooperation, a fair and just remuneration structure • Development of a platform for more efficient connection between AIS and its partners
<p>Shareholders and investors</p> 	<ul style="list-style-type: none"> • Shareholder meeting (1 time per year) • Operational returns announcements such as analyst conferences, domestic and international road shows, SET opportunity day (5-6 times per quarter) • Investor relations website, Email investor@ais.co.th, Line@ contact phone number (Daily) • Operation visits (1 time per year) 	<ul style="list-style-type: none"> • Sustainable business growth • Consistent dividend payments • Good corporate governance, transparency and trustworthiness • Equal access to information 	<ul style="list-style-type: none"> • Maintaining of competitiveness in the mobile phone business, expansion into new services to spur growth such as digital cloud services, insurance, etc. • Policy to payout 70 percent of dividends two times a year • Thai Institute of Directors Corporate Governance Report score in the “Excellent” range • Regular release of quarterly performance via all channels, timely and comprehensive disclosure of key data via appropriate channels to investors/shareholders

The 7 Strategies for Sustainable Development



1. Digital Innovation

Innovate digital products & services to improve the quality of lives and promote businesses in Thailand



3. Human Capital Development

Drive AIS' human capital to pursue new strategic growth area focusing on digital business

6. Emissions

Reducing GHG emissions and utilize renewable energy in most possible extent in our operation



Economy

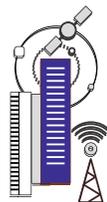
Society

Environment



2. Data Privacy & Cyber Security

Ensure effective data privacy and cyber security to enhance customer value while ensuring customer trust



4. Social Inclusion

Leverage our digital infrastructure & solutions to uplift community well-being & reduce the digital divide



5. Cyber Wellness

Establish trusted brand in cyber wellness & online safety to build healthy online space



7. Waste

Reduce & recycle waste from operation as well as encourage customers to dispose e-waste properly

Target 2023



Economy

1. Digital Innovation

- Generate 150 million baht in revenue from digital innovations

2. Data Privacy & Cyber Security

- Operate in adherence to applicable laws and regulations including the Cyber Security Act and Personal Data Protection Act.
- Continually enhance cyber security capabilities both in terms of technology and personnel readiness to protect basic infrastructure, systems and new services. Bolster protection and technological processes to improve safety.
- Enhance cyber security efficacy and capability and personal data protection using Machine Learning and Artificial Intelligence to augment monitoring, analysis and threat assessment, use Automation to speed up and streamline processes.
- Become a leading Cyber Security Operation Center for corporate clients. Bolster service in terms of personnel, procedures and technology. Develop capacity to provide advice to provide the Data Protection Office (DPO) as a service.
- Develop and improve technology, cyber security and personal data privacy policies and standards, including revamping CSL directions for synchronicity with AIS



Society

3. Human Capital Development

- Acquire enough staff with new abilities in digital technology to support business growth
- 85% of talent pool is retained
- 85% of Talent on Critical Role staff undergo new Ability training in digital technology
- Employee Engagement Survey participation rate above 85% and Employee Engagement Index above 4.10 (82%)

4. Social Inclusion

- Improve the wellbeing of 700,000 people through our digital platform and collaboration

5. Cyber wellness

- Become Thailand's number one telecommunications brand, trusted for cyber wellness and online safety.
- Promote cyber wellness and online safety at 1,500 schools and protect 290,000 Thai users from cyber threats.



Environment

6. Emissions

- Reduce GHG emissions intensity as calculated from the ratio of direct and indirect emissions to data traffic by 90% compared to the baseline in 2015
- Increase renewable energy usage to 5% of total energy consumption compared to 0.06% in 2018

7. Waste

- Collect 360,000 units of obsolete mobile and related electronic waste for proper recycling
- Reduce non-recyclable E-waste from AIS services and operations from 5% of total waste in 2018 to 3%
- To be Thailand's No.1 telecommunication service brand that is also trusted for its environmental responsibility in terms of electronic waste, promoting awareness among the Thai people about proper recycling of E-Waste.



ECONOMY



Digital Innovation



Data Privacy & Cyber Security

Digital Innovation

Innovate digital products & services to improve the quality of lives and promote businesses in Thailand

Target 2023

Generate 150 million baht in revenue from digital innovations by the year 2023.

Significant Improvements 2020

- Tested 5G service to create opportunities and enhance the Thai industrial sector through cooperation with business partners and educational institutions on the development and trial of 5G technology, testing prototype services such as a remote controlled forklift.
- Collaborated with University of Tokyo to enhance IoT technology and applied it to forest areas for monitoring against forest fires and notifying relevant agencies in a timely manner.
- Received national and global awards for innovation excellence, including the 2020 Distinction Prize for a Large Organization from the National Innovation Agency (NIA) and Thailand MIKE Award 2020 for Most Innovative Knowledge Enterprise (Gold), reflecting the company's dedication to effectively managing and developing its innovation capabilities.

Challenges & Opportunities ^(GRI 103-1)

Digital technology has come to be a catalyst for the rapid change of the world. New businesses have sprung from using technology that better respond to the changes in demand of consumers in their daily lives and from other business. Challenges also result from global companies carrying out research and technological development and testing high-speed internet facilitated by low earth orbit satellites. All of the aforementioned are challenges for telecommunications providers the world over, including AIS, which is now facing the structural change of the market and competitors threatening its traditional methods for gaining revenue. At the same time, however, these matters pose opportunities for AIS to develop digital technologies that can drive its growth and competitiveness while generating value for customers and society. This requires that AIS adapt its business approach to stay in step with digital age consumers, take part in developing the economy and society, reduce its impact on the environment to a minimum and offer products, services and solutions that extend to a variety of industries such as solutions for Smart Cities, solutions for transport and logistics, solutions for public health and solutions for real estate. The Thai government's Thailand 4.0 policy is assisting in these efforts by fostering an ecosystem for ICT and growth in accommodation of lifestyles in the digital era. The year 2020 saw the world, including Thailand, beset by challenges in every dimension, in particular the COVID-19 pandemic, which was a catalyst for rapid change and affected a wide segment of the population, obligating businesses to urgently find ways to cope and survive. The true challenge however,

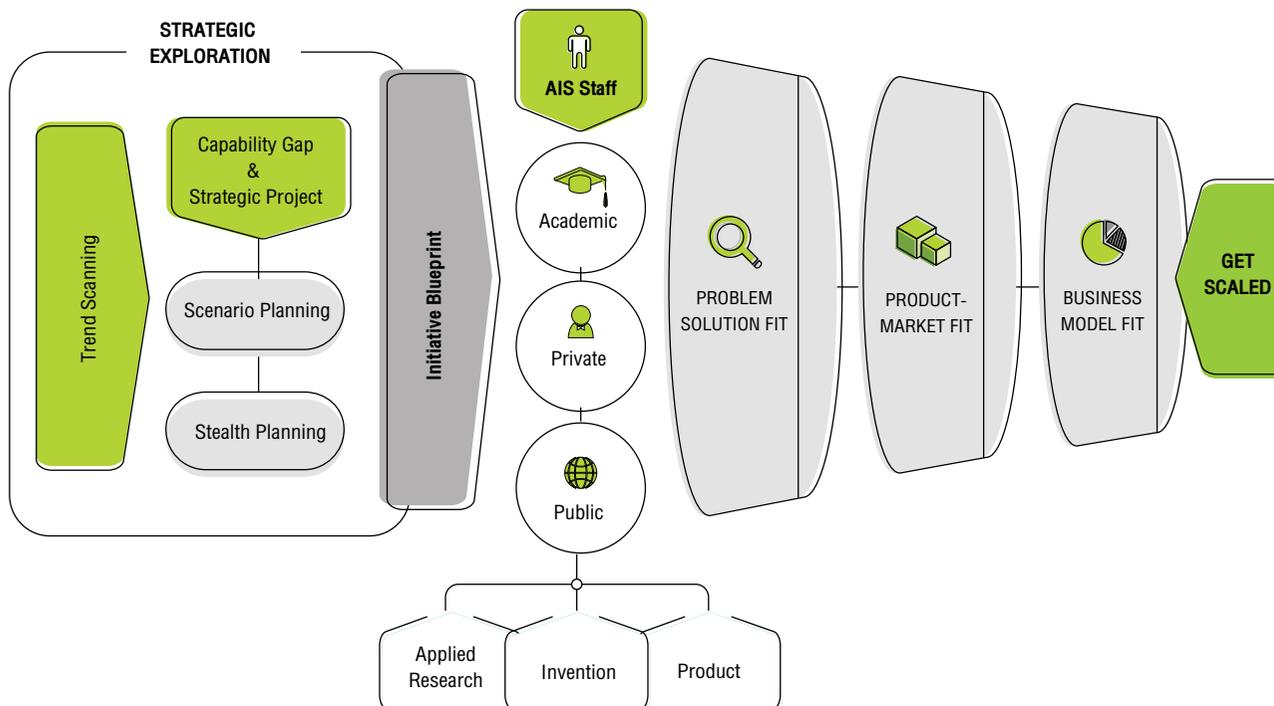
was the New Normal that followed the infection, in which ways of life and work had to be completely reconsidered. AIS saw it necessary to work with all sectors to seek solutions to these challenges through responsive and sustainable innovations.

Management Approach ^(GRI 103-2)

AIS is resolute in its mission to create innovations that deliver products and services that better the daily lives of the Thai people and enhance their businesses. AIS seeks to become a leader in innovations for sustainability by enhancing its adaptability and formed an Innovation Development Department tasked with supporting the company's innovation leadership both internally and through collaboration with partners. The department also supports doing business in the digital era and growing new sources of revenue that coincide with changing trends both current and to come in the future in all markets relevant to AIS and beyond. The department produces a report for the Chief Information Officer (CIO) at least once a month. The CIO set strategies and policies as well as manage information technology in the short and long term to better the organization's capabilities and competitiveness in a digital world.

AIS Open Innovation Framework ^(GRI 103-3)

AIS enhanced the AIS Open Innovation Framework so that it may serve as a guideline for efficiently supporting the development of innovations based both in the company's own internal knowledge and knowledge from outside the organization towards its business goals. The framework consists of the following:



AIS set strategic projects and analyzed capability gaps to respond to the demands of the digital era and foster both medium and long term growth. Based on an analysis of the current situation, market tendencies and plans considerate of global circumstances, projects for the short term and a framework for long term innovation were created using the aforementioned strategic plans as a guideline for selecting and building upon new business ideas to be carried out through internal potential and collaboration with partners in the public, private and academic sectors. AIS divided management and support for each business idea into 3 phases according to the phases of a startup to appropriately allocate resources and support for development and to ensure flexibility and timeliness. The three are Problem Solution Fit, as in ideas still in need of problem solving, Product Market Fit, as in products and services that need to be market tested and refined, and Business Model Fit, as in ideas ready to grow and be introduced to a wider market.

Management of Innovation Development Units

The innovation development unit's approach to work focused on the concepts of Design Thinking, Lean Startup and being Agile. The small team utilized a flat team structure amidst the challenging environment to rapidly uncover innovations. The unit developed a variety of platforms to support forthcoming solutions, such as 5G IoT Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR) Blockchain and Robotics. Such operations will allow AIS to build upon innovations internally and externally using the unit's capabilities and knowledge and allow for more efficient management of resources.

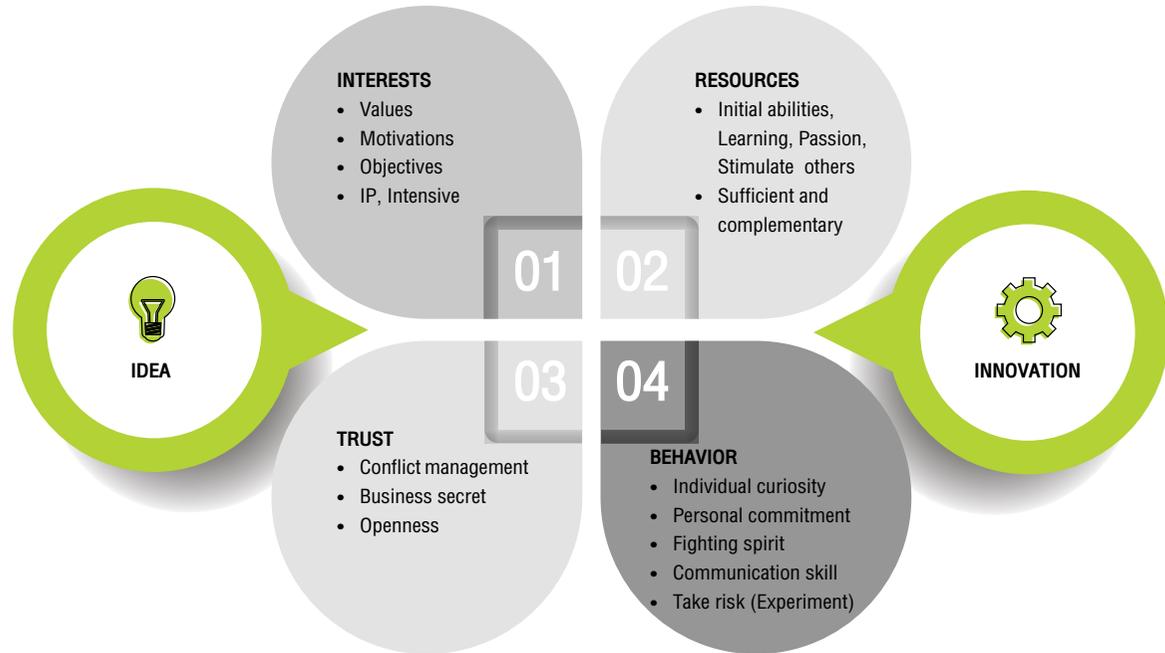
Building and Managing Relations with Partners

AIS is determined to grow alongside its partners and thus engages in collaborations with academic and state agencies to exchange knowledge and technology as well as jointly development solutions that go from the prototyping phase to market. With private sector partners, AIS created a Partner Platform to serve as an end-to-end hub for creating solutions and services, providing technology, tools and equipment and needed software to ensure synchronicity with industry and market trends both current and in the future. AIS also supports the innovations of startups, developers, students and all interested in the area, seeing them as potential business partners who can bring about market responsive solutions.

AIS devotes importance to managing its relations with partners and uses the Collaboration Diamond principle, which outlines criteria and processes for collaborating with partners. The approach starts with a mutual understanding of objectives that benefit all sides and emphasizes the sharing of resources and building trust. By building long term cooperation and jointly creating innovations, AIS has been able to secure the trust and partnership of 21 academic and higher-learning institutions, 8 state and non-profit organizations and 6 private agencies. In 2020, AIS took part in research with partners worth a combined over 30 million Baht and provided support in the form of resources by staging courses for the transfer of knowledge and supplying IoT equipment worth over 2 million Baht.

AIS allots funding for research and development in support of growing the ICT industry ecosystem both in the medium and long term. In 2020, AIS invested over 162 million Baht for research and development of innovations with an emphasis on IoT, Smart Industries and Microservice systems.

Collaboration Criteria



2020 Progress

1. Supporting Internal Innovation

AIS InnoJUMP, which promotes staff to adopt an innovative mindset and drives innovation by providing opportunities to experiment and create developments that may lead to new business ventures for the company. The program also designs incubation processes that are responsive to innovations to accelerate development. Employees are able to propose their projects and business ideas directly to the NEXT unit and chosen projects are incubated with funding for testing and experimentation. The objective of the program is to develop new products and services for market. In 2020, AIS organized “INNOJUMP Competition 2020” for a second consecutive year, receiving over 290 submissions from AIS staff, up from 120 in 2019. The competition offered 250,000 Baht in award money as well as funding for testing and experimentation as to develop projects until market viable.

Submissions included **School Van Clever**, a monitoring system for school students in transport vans to prevent against cases such as children being left trapped in vehicles. The team behind the project designed a simple and effective system using cameras and sensors to detect movement in school vans as well as the location and speed of the vans. Motion detected in the vehicles triggered notifications for drivers that are stopped by checking on the van.



2. Collaboration with Partners to Drive Innovation

In 2020, AIS engaged with partners in the following way:

2.1 5G Testing to Create Opportunities and Enhance the Thai Industrial Sector

AIS worked with business partners and universities to develop and trial 5G technology, testing use cases to found a sustainable 5G Ecosystem.

- AIS took part in developing a forklift remotely controlled between Bangkok and Saraburi via a 5G network, working with SCG and Prince of Songkla University. An operator was able to move goods from one location to another with accuracy in real-time. The development poses benefit to businesses that will be able to train remote operators for high-risk work.
- AIS tested the application of 5G technology to logistics, in particular to allowing remote container crane operation at Hutchison Port of Laem Chabang Port in Sriracha District of Chonburi, Thailand, making it the first place in the country and Southeast Asia to obtain such capability. The speed of 5G allowed latency in the remote operation to be reduced by 2.7 times from 30 to 11 milliseconds, providing near instantaneous operation of cranes from a control room using a camera feed. The improved efficiency of the cranes served as a model for the logistics industry and has paved the way for future adoption.



2.2 Projects from Joint Research and Development with Academic Offices and Educational Institutions

- IoT satellite



AIS worked with University of Tokyo to enhance IoT technology, installing IoT equipment in remote forest areas to monitor against forest fires and notify relevant agencies so that they may respond and mitigate damage in a timely manner. The technology utilized functioned in two ways, sending data through NB-IoT to mobile phones and through low Earth orbit satellites to areas without mobile network coverage. In 2020, AIS installed equipment in 3 locations at risk of forest fire and plans to add another 20 locations in 2021.

- AI for Jaundice Monitor** A research project aimed at developing an Artificial Intelligence able to screen Jaundice patients using photographs of the sclera taken by mobile phone. Undertaken by AIS in collaboration with King Mongkut's University of Technology Thonburi and

Khon Kaen University, the objective of this project was to aid physicians in post-operation follow up of Jaundice patients. The project is currently in the test phase and has collected over 1,000 photographs from more than 200 participants, showing an accuracy rate of 80 percent. Real world application is expected to begin in mid-2021.

2.3 AIS IoT Alliance Program (AIAP)

Aimed at promoting knowledge and skills from a range of industries, public and private organizations, equipment manufacturers and software developers to bring about different IoT solutions able to address the needs of different industries and enhance the potential of the country, this program served as a hub for technological and information exchanges undertaken to develop products, services and solutions. AIAP membership rose to 1,900 in 2020 and acquired partners including Koh Samui Municipal Office for the development of Smart Lighting, a solution using NB-IoT to automatically regulate lighting according to climate conditions and to monitor lighting from a control room for more efficient lighting management and resource conservation. The solution also improved safety for the public and tourists after being installed in 5,000 locations across Koh Samui of Surat Thani and led to plans to install another 10,000 locations within 2021. AIS also provided equipment and tools for the development of a prototype particulate matter measuring device under the Sensor for All project carried out for a third year by the Faculty of Engineering of Chulalongkorn University.

2.4 AIS Playground



AIS established a space to serve as a central incubator of innovation, providing basic infrastructure and technology to university students, developers and startup entrepreneurs looking to test their prototypes and connect to AIS's Application Program Interfaces (API) to gain access to actual commercial services such as an SMS system, online payment, AIS privileges for customers as well as experts who can provide them with guidance and technical know-how. The AIS Playground was made available in Bangkok and across the country with locations at AIS D.C. The Emporium, AIS PLAYGROUND@CMU Learning Space in cooperation with Chiang Mai University and the two new locations for 2020, AIS PLAYGROUND@SWU in cooperation with Srinakharinwirot University Prasarnmit and AIS PLAYGROUND@PSU in cooperation with Prince of Songkla University. In 2020, 638 groups joined in testing prototypes and sought expert guidance via AIS Playground with over 116 connecting their products and services with AIS for support toward going to market. AIS also staged workshops and courses at its AIS PLAYGROUNDS with the aim of enhancing creators and business operators with events including the DevFes seminar and Code Craft course. Overall, AIS organized over five workshops and courses attended by more than 400 people.

- AIS Young Digital Talent (AYDT)



was carried out with the objective of creating opportunities for university students to develop innovations and become tech startups. Undertaken in cooperation with the College of Innovation, Thammasat University and Stanford University, AIS also provided openings for internships to participants in the program, selecting interns based on recommendations from guidance counselors and pairing them with caretakers with applicable knowledge. Over 259 students from Mahidol University, King Mongkut's Institute of Technology Ladkrabang and Kasetsart University Bangken took part.

AIS ROBOTIC LAB

AIS created Thailand's first 5G lab robot for the assistance of physicians. Connected to an operating system on a 5G network, the robot was an achievement of the AIS NEXT team's Innovation unit, which designed the 5G Robot Platform by combining technologies, networks and medical care to create the 5G Robot for Care, a tool able to adapt to the unique requirements of different hospitals. AIS Robotic Labs have been provided to 22 hospitals so far and were used in treating COVID-19 patients, screening them using an intelligent thermoscan and facilitating video calls for contactless medical consultation. The robots are controlled using 5G and have helped reduce workloads, crowding and infection risks for patients as well as medical workers.



AIS Receives 2 Major Awards for being an Excellent Innovation Organization at the National and Global Levels

Affirming AIS as a leader in innovation and technology in Thailand that supports the creation of innovation organizations and sustainable national development, the company received two prestigious awards at the national and global level, reflecting its dedication to effectively managing and developing its innovation capabilities.

- 2020 Distinction Prize for a Large Organization from the National Innovation Agency (NIA)
- Thailand MIKE Award 2020 for Most Innovative Knowledge Enterprise (Gold)



AIS has set a budget of 200 million Baht for research and development in 2021 with its aims being supporting developments for AIS and cooperation with the partners in its partner platform and improving the efficiency and capability of its internal systems.

Performance Table

Subjects	Unit	2017	2018	2019	2020
 Business Partners ¹	Partner	37	72	89	80
 New products launched ²	Product	43	49	37	39
 Investment in R&D	Million Baht	7	91	159	162
 Revenue from digital innovations	Million Baht	-	-	70.3	75.8

Remarks:

- Partners on AIS partner platforms that launched a product or service to market.
- New products and services launched include new products and services or those that received a functional improvement in the past year.

Data Privacy & Cyber Security

Ensure effective data privacy and cyber security to enhance customer value while ensuring customer trust

Target 2023

- Operate in adherence to applicable laws and regulations including the Cyber Security Act and Personal Data Protection Act.
- Continually enhance cyber security capabilities both in terms of technology and personnel readiness to protect basic infrastructure, systems and new services with a focus on protection of cloud systems from public and private to hybrid. Bolster protection of the 5G network, improve Identity and Access Control (IAM) and technological processes for Backup & Restoration to improve safety.
- Enhance cyber security efficacy and capability and personal data protection using Machine Learning and Artificial Intelligence to augment monitoring, analysis and threat assessment, use Automation to speed up and streamline processes.
- Become a leading Cyber Security Operation Center (CSOC) for corporate clients. Bolster service in terms of personnel, procedures and technology. Develop capacity to provide advice to provide the Data Protection Office (DPO) as a service.
- Develop and improve technology, cyber security and personal data privacy policies and standards, including revamping CS Loxinfo Plc. or CSL directions for synchronicity with AIS, both in terms of its technological standards and legal developments which expected to complete by 2022.

Significant Improvements in 2020

- **Laws and Regulations** Reviewed new declarations and acts to ensure operations and policy compliance with regulations such as the Requirements of the Supreme Court President on Consideration of Electronic Cases of 2020, the Electronic Transactions Commission Notification on Guidelines for Cloud Service Usage of 2019 and the Ministry of Digital Economy and Society Notification on Standards for Personal Data Security of 2020.
- **Enhanced personnel data privacy capabilities** Enhance online and offline communications to raise awareness among employees of cyber security and data privacy and the data classification framework and expanded online courses and knowledge evaluation to outsourced personnel.
- **Technological and operations advancements** Added access channels for company systems to accommodate Work-from-Home with an emphasis on security, control and monitoring of access from outside the company while accommodating the COVID-19 pandemic and the New Normal.

Challenges & Opportunities ^(GRI 103-1)

Information technology is progressing at a rapid pace in the modern world with both personal and corporate communication methods changing. Informational transactions online have risen immensely and now take place across the globe. As a result, users are now at a higher risk of cybercrime and the matters of cyber security and personal data protection have become an important issue among administrative agencies worldwide, which have issued increasingly stringent laws and regulations in the interest of improved protection. Thailand began enforcing two laws, the Cyber Security Act of 2019 and the Personal Data Protection Act of 2019, resulting in continuing improvement in our process to align with the laws and restrictions. In addition to changes in regulatory, operators are facing the evolving complexity of technologies and technology development. New technologies such as IoT or 5G will require new or a revisit in approaches to cybersecurity to ensure the data privacy, cyber security and resilient. Meanwhile, advanced technologies, particularly cognitive technologies e.g. Artificial Intelligence, Machine Learning have been leveraged by cybercriminals. It is not yet

to realize the full scope of the threat posed by such cognitive technologies, resulting in ever more sophisticated threats. A rapidly evolving landscape of cyber threats has introduced new skills requirement in cyber security and could lead to the deficit of cyber security skills. AIS, as a digital service provider, manages massive amounts of data, both from its operations and from its customers, and is compelled to work in adherence to laws to protect against the leakage of personal data as well as to reduce risks to its finances and reputation. Moreover, AIS sees an opportunity in creating and developing complete cyber security services, which would address its operational requirements and enhance its capability to service clients. Thus, beyond carrying out its own cyber security and personal data protection, AIS is seeking to build a body of knowledge on the two matters and relevant new technologies such as the National Blockchain Hybrid Cloud, IOT and financial and insurance mechanisms. AIS also place value on building staff capability and knowledge to be ready for technology advancement.

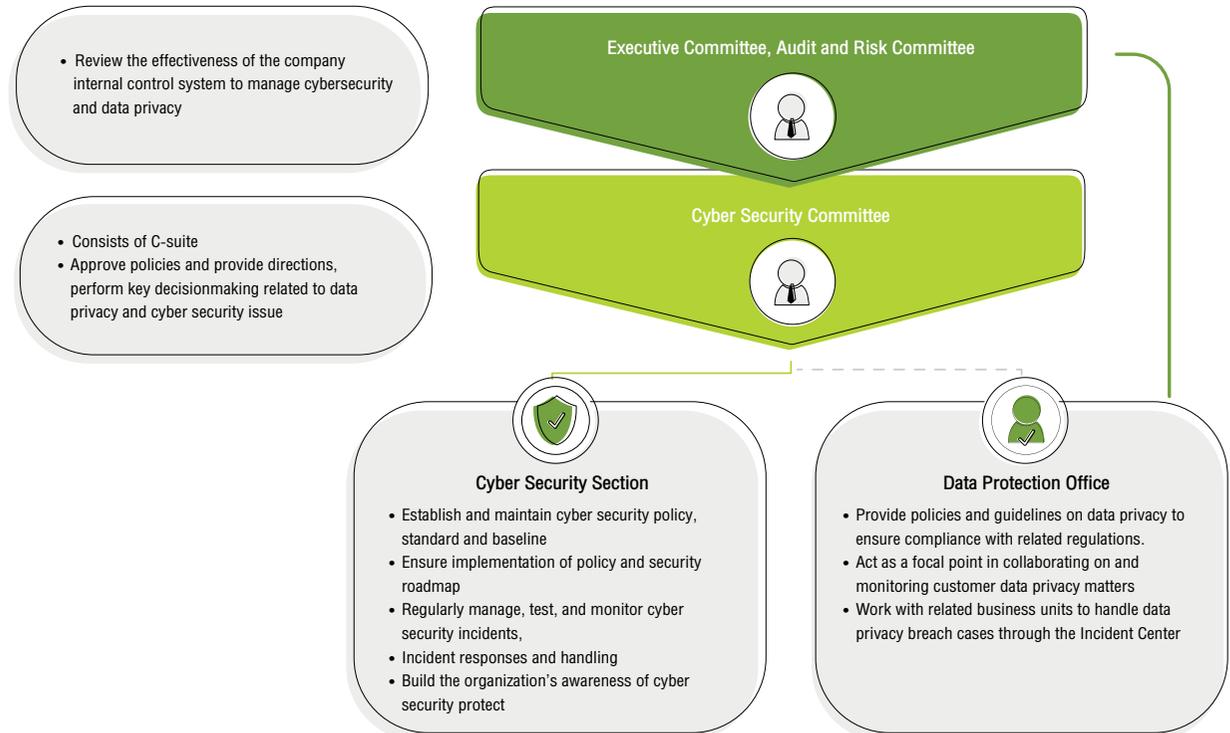
Management Approach ^(GRI 103-2)

AIS manages and implements policies, procedures and administrative systems for all offices corporate-wide to secure trust from its customers that it operates with transparency in its information and personal data protection and includes that trust in its risk management handled by the Audit and Risk Management Committee. At the administrative level, policies and strategies for cyber security and personal data protection are decided by the Cyber Security Committee and Data Protection Office, which must report to the Board of Directors and Audit and Risk Committee on a quarterly basis. AIS also enforces cyber security policies and data privacy policies for all its offices, extending to related external organizations. The Company carries out regular systematic internal audits to ensure its management of data privacy and cyber security and related operations adhere to its policies, standards and frameworks.

AIS has a Chief Information Officer (CIO) who takes part in the cyber security and the personal data protection by setting policies, implementing controls, engaging in operations and providing advice on protection and remedy to ensure the systems and procedures meet standards and effectively support its operation in the digital age. Cyber Security Section and Data Protection Office must report to the CIO at least once a month and to the Cyber Security Committee once a quarter, which reports directly to the Audit and Risk Management Committee that in turn reports to the Board of Directors once a quarter.

Ensuring AIS can continue operating in crisis situations, the Company established a Crisis Management Committee comprised of C suite executives and Heads of Business Units, which reports directly to the President and CEO. The committee is responsible for and has decision-making authority during times of crisis from response to damage mitigation to following up to ensure continuity of operations as to reduce impact on customers and the company's reputation. The committee also decides on remedial measures for customers and manages the Crisis Communication Team to communicate and publicize necessary information inside and outside the Company as well as for communication with government agencies and related organizations in an accurate and timely manner.

Data privacy and Cyber security Governance Structure



Privacy Protection (GRI 103-3)

AIS maintains a Data Protection Office, which acts a central hub for the protection and monitoring of the personal data of customers. The office provides guidelines and policies to maintain compliance with relevant laws and regulations for both AIS and group companies as well as advice on data storage and usage to other offices within the Company to enhance business operations, competitiveness and pave the way for new businesses. With a commitment to legal compliance, AIS undertakes the following actions and processes to enhance its data privacy:

- **Indicate Customer Data Privacy Protection Guideline** for users to inform them of its regulations and practices concerning personal data protection e.g. objectives of data collection, measures to secure customer data, rights of customers, contact information.

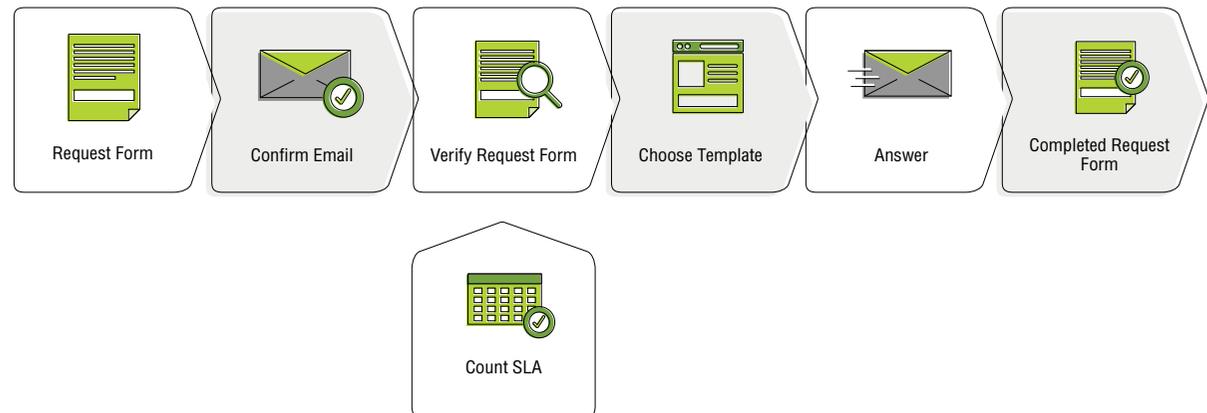
- **Data Life Cycle Management** in the interest of protecting personal data is conducted as follows:

<p>Collection, Storage and Utilization</p>	<ul style="list-style-type: none"> • Personal data is collected and stored purposefully and with restrictions in a lawful and fair manner and is done so only within the limitations of providing service. • Personal data is collected and stored in accordance with terms of service and/or customer consent and is done only for the purposes notified to customers with no utilization beyond purposes accepted/consented by the customer. • Appropriate data privacy protection measures are implemented in alignment with personal data confidentiality, to protect against loss and unauthorized or unlawful access, destruction, utilization, altering, amendment or disclosure as well as to protect against unauthorized application of personal data in accordance with the AIS Group Cyber Security Policy
<p>Disclosure</p>	<ul style="list-style-type: none"> • Personal data disclosure is done in accordance with terms of service and/or customer consent and is done only for the purposes notified to customers with personnel, company operatives and partners overseen to prevent utilization/disclosure beyond purposes notified to customers and in accordance with legal compliance policies, the National Broadcast and Telecommunications Commission Notification on the Rights Protections of Telecommunication Service Users in Relation to Personal Data Privacy and Freedom to Communicate via Telecommunications and other laws relevant to personal data. • Guidelines are provided to partners on the collecting, storage, utilization and disclosure of personal data requiring that they put in place measures to adequately protect personal data via a cyber security policy at least must be equal to AIS Group standards.
<p>Destruction</p>	<ul style="list-style-type: none"> • A clear policy is provided on the time period for personal data collection and storage based on data collection and storage purposes or the contract or legal relation period alongside a policy for the deletion or destruction of personal data or rendering of data to remove personal identifiers.

- Limiting access to sensitive information and applying a range of data protection techniques covering storage, utilization and transmission to safeguard against personal data leaks or breaches.
- Incorporating the Privacy by Design and Privacy by Default principles into its services and products as necessary.
- Utilizing the Data Protection Impact Assessment: DPIA to identify and mitigate data privacy risks in new services.
 - Evaluate risks in daily operations to protect against leaks and implement measures to mitigate such risks.
 - Started implementing a Standard Contractual Clause: SCC both internally and with partners in need of access to customer data protecting against the forwarding or transmission of private customer data.
 - Started keeping a Record of Processing for private data both internally and with partners to confidently utilize, process and disclose private data and to allow for the tracking and risk assessment of private data processing.

- Setting specifications for the data flow process and communicates with relevant agencies to ensure compliance with said specifications.

- Establishing a system and enhancement of processes to customer requests as to comply with the Personal Data Protection Act within the legal timeframe, AIS provided a variety of contact channels to customers, including the AIS Call Center, AIS Shop and self-service channels providing request forms. After vetting customer privileges, AIS responds to customers within 30 days.



Data Request Management

The Company provides customer usage data to government agencies in accordance with legal requirements and upon request by legal authorities such as the Court of Justice, Office of the Royal Thai Police and Anti-Money Laundering Office with details as follows:

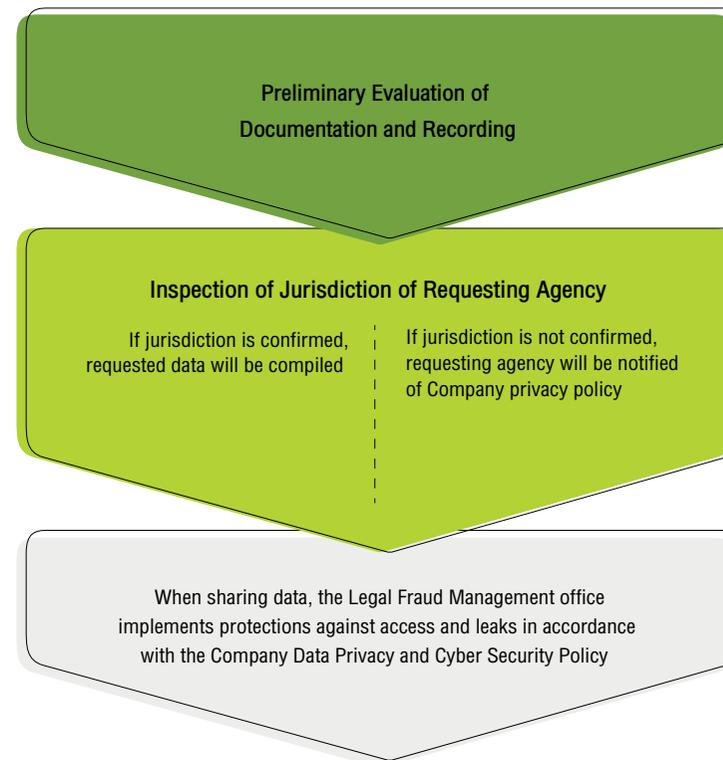
- Managerial responsibilities for government data requests oversight**

The Personal Data and Cyber Security Committee comprises C suite executives and is responsible for overseeing and setting policies on data privacy protection, assessing risks and responding to cyber threats and designing data privacy and cyber security strategies in compliance with the law and encompassing data provided to government agencies upon request.

- Disclosure of process for evaluating and responding to law enforcement or government data requests**

AIS prioritizes the protection of personal data and has tasked its Legal Fraud Management office with considering the disclosing of private data to government agencies upon request to ensure compliance with principles set out by National Broadcasting and Telecommunications Commission Notification on the Protection of Telecommunication User Data Privacy and Freedom of Communication through Telecommunication Chapter 1 Clause 4 (1) and Data Privacy Act Article 24 (6). The process and procedure for consideration, which has been authorized by the Chief Corporate Officer, is as follows:

Disclosure of process for evaluating and responding to law enforcement or government data requests



The Legal Fraud Management office concludes government agency requests for personal data into a monthly report for the Chief Executive Officer. In 2020, a total 26,700 requests were made to the office, which processed 92 percent of the requests.

- **Remedy for victims of human rights violations as a result of the company's data sharing practices** Incident Investigation and corrective action is divided into two categories based on legal context as follows:

- **Compensation in Criminal Cases** Compensation in accordance with the Damages for the Injured Person and Compensation and Expense for the Accused in Criminal Case Act of 2001 can be applied to providing compensation for damages resulting from the actions of others, including the sharing of personal data to the government by virtue of legal authority.

- **Compensation in Civil Cases** Compensation in the event of a civil suit resulting from an illegal violation of personal data privacy will be equal to actual damages incurred.

- **Notification of data subjects in case of data sharing under legal requirements**

AIS terms and conditions for personal data are displayed in its Privacy Policy, which can be accessed at <https://www.ais.co.th/privacypolicy/myais/en/>. The Company will only disclose personal data upon the consent of the data subject, when disclosure satisfies company objectives and when disclosure is in compliance with Thai law.

However, personal data may be disclosed to the government during an investigation carried out by government officials such as police or agents of the Anti-Money Laundering Office seeking evidence of wrongdoing. While evidence may or may not be found, the Company will not be able to notify the data subject of the disclosure as requests of such a nature are commonly made for the data of suspects or individuals relevant to the crime and any notification could make the Company an accomplice to the wrongdoing, support the wrongdoing or be a detriment to the case.

Respect for Human Rights and Assessment of Risks to Human Rights in Connection to Personal Data

AIS acknowledges the significance and respects human rights and maintains a Human Rights Policy aligned with the United Nations Universal Declaration of Human Rights (UNDHR) and the Declaration on Fundamental Principles and Rights at Work of the International Labor Organization (ILO).

The Company's Board of Directors placed enactment of the policy under the Sustainable Development Committee through its Human Rights Committee, which is tasked with implementing the policy in collaboration with the Risk Management Committee so as to identify risks to human rights including the protection of personal data.

The two bodies also identify affected groups to outline remedial measures and prevent against human rights violations throughout the business value chain. Details of the effort can be viewed at <https://sustainability.ais.co.th/storage/respect-to-human-rights/human-rights-risk-assessments-en.pdf>

Furthermore, in 2020, AIS reviewed and improved its data privacy protection policy to display its personal data storage, which is done purposefully, within limitations and in compliance with the law and fairness with consideration towards the human rights of data subjects within legal parameters.

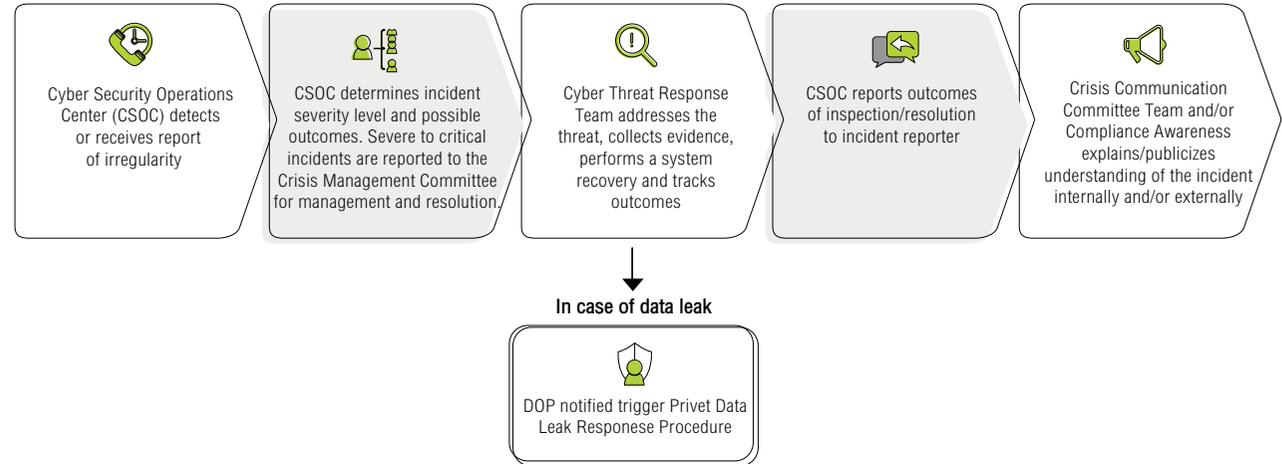
Operationally, AIS designed a Data Protection Impact Assessment (DPIA) to decipher risks to the Company's personal data protection measures. The assessment was designed to result in a document explaining processing of personal data, calculate probabilities and aid in the management of risks to personal rights and freedoms resulting from the processing of personal data, leading to measures protecting against such risks.

- Promoting awareness, knowledge and understanding on customer data protection to all personnel and partners in the interest of operations that adhere to policies, laws and relevant new regulations AIS promotes personnel awareness of data classification and provides the necessary tools for classification throughout its structure as well as promotes awareness among personnel and trade partners on Data Life Cycle Management.

- Setting a framework for systematic reviewing of personal data protection in the interest of customer confidence in Company operations, the Internal Audit Team plans comprehensive and systematic reviews throughout the year with frameworks based on principles and requirements from the Personal Data Protection Act, approaches for personal data protection provided by government agencies, universities and expert organizations and business operations, with the focus on activities with risks and that involve personal data.

- AIS maintains an Incident Center that serves as a central office for responding to cyberthreats arising from leakages or breaches related to personal data. The center comprises offices including Data Protection, Cyber security and Information Resilience, Customer Complaints, Technical Support, Human Resources, Public Relations, Legal, Business Relations and Customer Services. Customers with issues or queries can notify the center by telephone at 08-000-9263 or by Email at complaint_center@ais.co.th. The threat response process is as follows

Cyber Threat Response Procedure



Private Data Leak Response Procedure

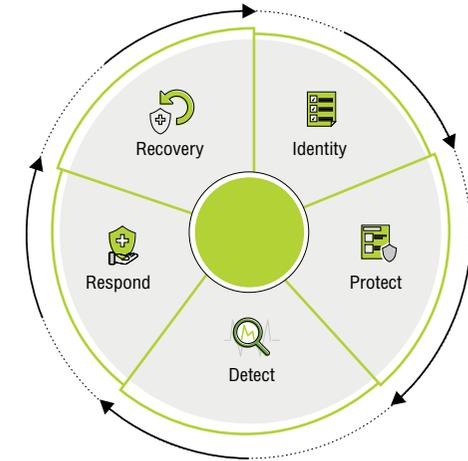


Cyber Security

AIS has the infrastructure, systems and protocols to manage, test, and monitor cyber security carried out by its Cyber security and Information Resilience team, a dedicated team responsible for cyber security and building awareness of cyber security within the organization. AIS is committed to protecting its systems from cyber threats and regularly enhances its systems and infrastructure to meet data protection standards, performs security evaluations and tests ahead of launching systems and applications and has software developers perform self-evaluations during their processes. The Company uses automation to enhance the efficacy of its processes so that they are more capable and quick to respond to cyber threats and monitors against threats 24x7 using a central notification system that allows for timely response and the ability to lockdown equipment. The Security Information and Event Management (SIEM) system empowers these capabilities in real-time and works in conjunction with User Entity Behavior Analysis (UEBA), which enhances detection of irregular incidences and the evaluation of cyber threats. Cyber security policies and practices are regularly prescribed and improved to maintain alignment with international practices and relevant regulations.

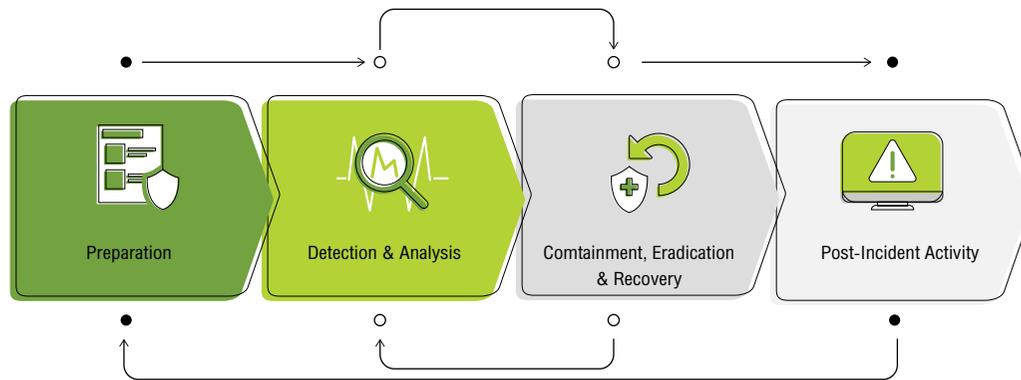
- **Cyber security guidelines and frameworks**
 - AIS utilizes the **Cyber Security Framework** by the US National Institute of Standards and Technology (NIST) as a guideline for designing its cyber security strategies and process, which includes the following steps, Identify, Protect, Detect, Respond, and Recover. AIS also plans to develop further systems and processes based on other relevant standards and protocols to enhance the efficacy of its cyber security and privacy protection.

Cyber Security Framework



Source: National Institute of Standards and Technology

Incident Response Framework



Source: Computer Security Incident Handling Guide by National Institute of Standards and Technology

- For responding to cyberthreats and its escalation process, AIS applies the Cyber Incident Response Framework by the National Institute of Standards and Technology (NIST) to its daily operations. The framework involves the following steps for addressing incidents; Preparation, Detection & Analysis, Containment, Eradication & Recovery, and Post-Incident Activity. All internal cyber security complaints are directed through dedicated channels and treated according to their level of severity.

- Work-from-Home** In situations where operation from AIS offices is not possible, the Company has provided access channels through which personnel may perform their duties effectively with the emphasis being on security through monitoring and control of information technology systems being utilized remotely and the implementation of policies and conditions such as the Centralized Remote System (CRS) standard and the Mobile Devices, Teleworking and Bring Your Own Device Standard (BYOD Standard). Cyber security has also been enhanced for the Microsoft Office 365 system encompassing usage, protection of confidential company data and mobile device authorization.

- Coordination with regulators and IT infrastructure agencies** AIS signed a Memorandum of Understanding (MoU) to jointly study and establish the Thai Telecommunication Computer Emergency Response Team (TTC CERT), which is aimed at supporting coordination, information sharing and supervising and managing cyber threat events between information administration and infrastructure agencies in accordance with the Cyber Security Act.



AIS obtained the following certifications and standards, which underline its commitment to the data security of its services and customers:



- **ISO27001 Information Security Management System (ISMS)** since 2015 and further expanded the scope, covering CSOC as a service since 2020

- **CSA STAR (Cloud Security Alliance) Self-Assessment** since 2016

- **PCI DSS (Payment Card Industry Data Security Standard)** since 2017, which covers merchants and will expand to payment service providers



Further information on

- 1) AIS personal data protection policy
- 2) Cyber security policy

Please see “Related policies” at <https://sustainability.ais.co.th/en/sustainability-priorities/data-privacy-cyber-security>

2020 Progress

AIS achieved its targets of elevating cyber security and personal data protection, with results in 2020 as follows:

1. Compliance with laws and regulations

- **Reviewed frameworks and policies for alignment with laws and regulations to ensure company operations and policies comply with the law** Reviewed operations and polices for compliance with regulations such as the Personal Data Protection Act 2019 and the Cybersecurity Act 2019 and prepared the Company to accommodate new laws and regulations such as supplementary laws to both acts. Reviewed new declarations and acts such as the Requirements of the Supreme Court President on Consideration of Electronic Cases of 2020, the Electronic Transactions Commission Notification on Guidelines for Cloud Service Usage of 2019, the Ministry of Digital Economy and Society Notification on Standards for Personal Data Security of 2020, the Decree Identifying Agencies and Enterprises in which Controllers of Personal Data are not under the jurisdiction of the 2019 Personal Data Protection Act of 2020, Notification of the Office of Insurance Commission of Regulations on Supervision and Management of Information Technology Risks of Non-Life Insurance Companies of 2020 and the Notification of the Office of Insurance Commission on Regulations on Issuance and Offering of Non-Life Insurance by Non-Life Insurance Companies and the Operations of Non-Life Insurance Agents, Non-Life Insurance Brokers and Banks of 2020.

- **Appointed a Critical Information Infrastructure Officer (CIIO)** The Critical Information Infrastru ture (CII) office was established in accordance with the Cyber Security Act with approval from the Company's Information Security Committee.
- **Supported cooperation between the state and private sector on cyber security and data privacy in the following ways:**
 - Cooperated with administrative agencies, state offices and internet and telecommunications services providers to establish the Thai Telecommunication Computer Emergency Response Team (TTC-CERT) to respond to cyberthreats against the telecommunications industry.
 - Shared opinions with the National Broadcasting and Telecommunications Commission (NBTC) on the present state of the telecommunications industry in terms of cyber security and data privacy as well as participated in public referendums and the interpreting of draft laws with the intent to support cyber security and data privacy alongside evaluating the practical impacts and feasibility of such laws on business operations.
 - AIS worked alongside state agencies in support of drafting the Cyber Security Act while internally promoting an understanding of the role of a Critical Information Infrastructure (CII) organization according to the Cyber Security Act to its executives and managerial level staff involved in operational planning. All attended talks by domestic and international experts in the cyber security technology and legal fields.

- **Improved procedures and systems for electronic meetings** to meet international standards and adhere to the emergency decree on meetings held via electronic media of 2020 for shareholder meetings, Board of Director meetings and other important company meetings.

2. Personnel knowledge, skill and conscience development

- **For the enhancement of AIS cyber security and data privacy capabilities**, relevant staff underwent over 23 different training courses and certificate programs encompassing Ethical Hacking and Penetration Testing, to allow them to test the security of systems by seeking out loopholes and weaknesses, Incident Management and Forensics, to allow them to handle and manage cyberthreats appropriately and promptly as well as to inspect for digital forensic evidence and Cyber security and Data Privacy.

- **Continual cyber security in mind promotion for all AIS personnel nationwide** on a monthly basis to ensure proper and correct practices online and offline.
- **Courses and activities** AIS provides online courses that its personnel can access on-demand and organizes activities that provide knowledge on personal data protection, which are also disseminated via online media. Emphasis is placed on data classification and cyber threats. Opportunities are provided for personnel to speak with external experts and exchange knowledge once a year through online and offline channels and over 900 internal experts undertake tours to meet and provide know-how to offices that work closely with the personal data of customers and that have risks arising from access to confidential and sensitive data as well as personnel at regional offices to ensure awareness of new laws and regulations.
- **Communication** Done through Emails put out at least once a week, over 70 Emails were sent in 2020 with content covering digital strategies and cyber security practices, such as the dangers of phishing and malware, creating secure passwords, Thai and EU personal data protection approaches and data classification. The Inseedang Channel was added as another online communication avenue, allowing personnel to access data and discuss cyber threats with the Company's internal experts.

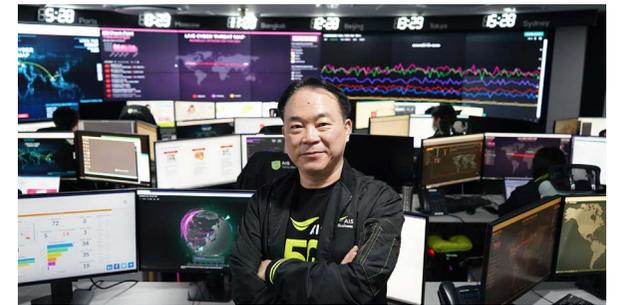
- **Aptitude testing** All AIS Group personnel must undergo testing of their cyber security and data classification knowledge. In 2020, 98 percent of total personnel passed such compulsory tests. At the same time, the Company extended testing to outsourced personnel.
- **Cyber drills** A total two drills were undertaken in 2020,
 - 1) Application of the Business Continuity Plan (BCP) in response to a cyber threat crisis to prepare personnel to handle cyber threats effectively with the 2020 drill scenario being a Ransomware Tabletop Exercise
 - 2) A Phishing Simulation testing the cyber threat knowledge of all Company and outsourced personnel.

3. Technology and operational procedure development

- **Procedure improvement**
 - Expanded usage of the Data Classification and Handling Framework, which determines data sensitivity, to all core offices handling the personal data of customers and operations systems in 2020.
 - Reviewed and improved cyber threat response in line with the NIST Cybersecurity Framework and integrated the process into the Company Crisis Response Plan. Executives and related persons were provided training and responded to demonstration cyber security scenarios. For 2020, AIS compiled the AIS Security Playbook for application in crisis communication and response training.

- Employed the MITRE Attack Framework, a base of knowledge accessible globally with information on strategies, formats and techniques used by system and database attackers, using its ATT & CK knowledge to form a basis for collaboration between cyber security operatives when reporting incidents and to compile a manual on cyber threat preparedness and response directing cyber security, response to undesired incidents, classification of protected items and identification of loopholes in the Company's cyber security.
- Reviewed and improved cyber security to encompass Work-from-Home and so that company operations are secured and aligned with requirements of the current situation such as use of Centralized Remote System (CRS) Mobile Devices, the Teleworking and Bring Your Own Device Standard (BYOD Standard) and the Access Control and Identity Management standard.
- Set regulations for entry and exit to the cyber security division in accordance with the ISO27001 standard.
- Improved and enhanced cyber security procedures by applying automation to threat detection and response, a core function of Security Orchestration, Automation and Response (SOAR) equipment.
- Improved cyber threat reporting using the TIMS-trouble ticket system, a complete management solution.
- Developed the Cloud Security Standard to encompass Private Cloud and Public Cloud usage and for alignment with company cyber security policies and international standards.

- **Improvement of the cyber security policy** for greater clarity, comprehensiveness and to encompass partners and external personnel in response to developments in the digital age and the New Normal such as mobile offices.
- **Continual data protection enhancement** In 2020, AIS improved its network security system in terms of protection and monitoring, adopting new technologies and upgrading and developing operating procedures, data collection and monitoring, notification and analysis of data to identify events with the potential for irregularity, developing Advanced Persistent Threat detection using Threat Intelligence drawing on threat data from various sources to fortify AIS. Automation was also applied to operations, including Hardening & Vulnerability Assessment and Patch Management, while to improve application and software security monitoring from the development process, a DevSecOps approach using a Security Automation Test tool was adopted.
- **The 24 x 7 cyber security operation center (CSOC)** After establishing the CSOC with modern detection tools and training personnel to be able to respond to threats effectively 24-hours a day in the previous year, AIS in 2020 expanded the center's services to monitoring against threats to the systems and information technology of its corporate clients. Towards elevating its information protection management systems to meet international standards, the company expanded the boundaries of its ISO 27001 certification to encompass services by the CSOC.
- **Technology, knowledge and experience exchanges with world leading telecommunications service providers** Exchanges with companies such as Singtel OPTUS and Globe allowed for model guidelines and practices for the management of data in an efficient and low-risk manner to be set, allowing for data protection and timely response to cyber threats. Exchanges also took place on ways to provide more channels for Work-from-Home while elevating security, control and monitoring information technology system access in accommodation of the COVID-19 situation and the New Normal.
- **Auditing** In 2020, internal and independent auditors reviewed the Company's information system and customer data protections, evaluating its general information system controls, data security awareness programs, cyber threat response and cloud system operations and security. Overall, AIS did not discover any cyber threats or violations of personal data or loss of data resulting in civil suits or legal fines in 2020.



AIS has set 2021 goals in accordance with its cyber security and data privacy mission as follows

Laws and regulations

- Consistently reviewed and evaluated company and group operations in 2020 in terms of compliance with the Personal Data Protection Act and related laws.
- Improved policies and technological standards for cyber security and personal data protection in line with legal developments such as by preparing operations and technological standards to comply with the Cyber Security Act as AIS entered the information technology and telecommunications group, which is part of the Critical Information Infrastructure (CII), and has become obligated to comply with related laws and regulations as well as prepared to accommodate forthcoming laws under both acts.

Personnel knowledge, skill and conscience development

- Consistently promoted understanding and awareness of cyber security and personal data protection as part of the corporate culture as to ready personnel to effectively identify and respond to cyber threats and protect personal data.
- Developed systems and processes of the Cyber Security Operation Center to handle protection, care, response and mitigation of cyber threats in accordance with international standards and prepared to act as a Managed Security Service (MSS) for corporate clients.

Technology and procedure development

- Had executives perform annual cyber threat preparedness and crisis management drills.
- Implemented a company-wide classification framework, such as for sending important documents within or out of the company, for securing outgoing data and for storing and destroying documents that have completed their data lifecycle as well as provided tools to make the work more convenient and safer.
- Communicated and enforced a data privacy policy and a revised cyber security policy with business allies and trade partners.
- Improved tools to increase cyber security when using Microsoft Office 365 encompassing access, protection of company secrets and use of authorized mobile and teleworking devices as well as inspected and evaluated the safety of the Active Directory (AD), enhancing its security to match international standards.

Performance Table ^(GRI 418-1)

Subjects	Unit	2017	2018	2019	2020
Data Privacy					
 Number of reported complaints regarding breaches of customer privacy and losses of customer data	Case	590	178	171	583
From individuals and general agencies	Case	575	131	124	560
From regulatory bodies	Case	15	47	47	23
Leaks, thefts, or losses of customer data	Case	0	0	0	0
Requests for private customer data from government agencies	Case	26,710	28,270	28,334	24,453
% to total requests	%	-	-	-	92%
Network Reliability					
 Average network interruption frequency	Unit	-	0.05	0.07	0.10
Average network interruption duration	Minute	-	15	39	35

Remarks:

1. The company provides customer data upon the request of authorized and designated government agencies by virtue of the law i.e. the Court of Justice, Royal Thai Police, Anti-Money Laundering Office, etc.

Economic Performance Table (GRI 102-7, GRI 201-1)

Subjects	Unit	2020
 <p>Economic value generated</p> <p>Total assets <small>(GRI 102-7)</small></p> <p>Total revenue <small>(GRI 102-7)</small></p>	Million Baht	350,171
	Million Baht	172,890
 <p>Economic value distributed</p> <p>Operating cost</p> <p>Employee wage and benefits</p> <p>Payment to government</p> <p>Community investments</p>	Million Baht	110,848
	Million Baht	9,800
	Million Baht	37,595
	Million Baht	25
 <p>Payment to providers of capital</p> <p>Dividend payments</p> <p>Finance cost</p>	Million Baht	20,219
	Million Baht	5,917
 <p>Economic value of AIS Group</p> <p>Net profit</p> <p>EBITDA</p>	Million Baht	27,434
	Million Baht	76,619



Society



Human Capital Development



Social Inclusion



Cyber Wellness and Online Safety

Human Capital Development

Drive AIS' human capital to pursue new strategic growth area focusing on digital business

Target 2023

- Acquire enough staff with new abilities in digital technology to support business growth
- 85% of talent pool is retained
- 85% of Talent on Critical Role staff undergo New Ability training in digital technology
- Employee Engagement Survey participation rate above 85% and Employee Engagement Index above 4.10 (82%)

Significant Improvements in 2020

Area of Development	Unit	Target 2019	2019	Target 2020	2020	Target 2023
Percentage of talent remained in AIS	Percent	80	98	85	85	85
Percentage of Talent on Critical Role staffs that underwent New Ability training	Percent	80	83	80	80	85
Employee Engagement Survey and Employee Engagement Index participation	Percent	-	-	≥75 (≥4.00)	-	≥85 (≥4.10)

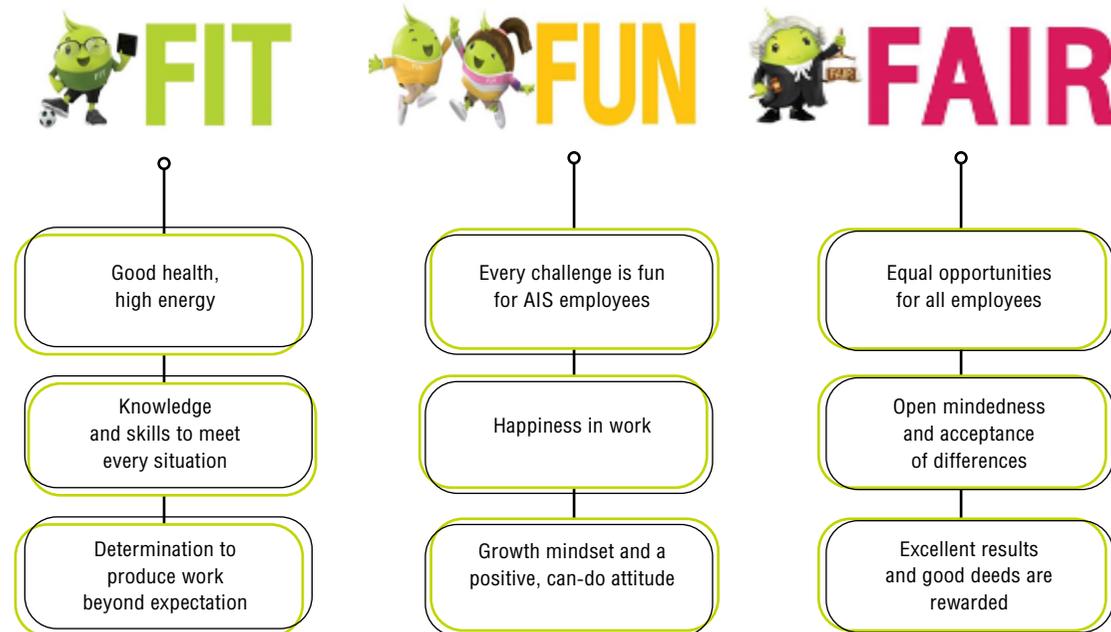
- **AIS received the Thailand's Best Employer 2020** award from Business Media International and the organizing committee of HR Asia Best Companies to Work for in Asia Awards, reflecting its human capital management excellence and promotion of a positive organizational culture.
- **AIS received the National Innovation Award 2020** for Innovation Distinction from the National Innovation Agency based on its support for staff and innovations aimed at social contribution.
- **AIS received the Thailand MIKE Award in 2020** for Innovation and Knowledge Management (Gold Class), highlighting it as an organization dedicated to effective innovation management and development.
- **AIS received the TMA Award in 2020** for Corporate Improvement Excellence and received its distinguished award for Human Resource Management Excellence, reflecting the importance the company devotes to human capital development.

Challenges & Opportunities (GRI 103-1, 103-2)

The telecommunications industry has progressed rapidly and definitively into the digital era. Businesses have had to adapt their approaches to the New Normal, especially due to the COVID-19 pandemic. Amidst changes in digital technology, AIS has had to transition into being a fully functioning digital technology service provider to keep up with varying customer demands and to maintain its leadership in the telecommunications industry. The challenge for AIS has been enhancing its capabilities and preparing itself to progress in-step with a rapidly changing business frontier. Progressing in the 5G age, which has brought with it heightened competition and rapidly evolving technologies, has made it necessary for AIS to seek out employees with new abilities and skills that are ready for an expansion of the company's business foundation. At the same time, AIS has had to support and enhance its experienced personnel, ensuring they are able to learn new skills in a short amount of time, so they may be equipped to respond to customer needs and maintain AIS as a competitive entity. AIS has also been carrying out an internal restructuring of its human resource management and altering processes in response to the COVID-19 situation, allowing for greater flexibility while enacting measures to provide staff and executives with the utmost in safety and to ensure continuity of operations. Moreover, AIS has been encouraging personnel to propose ideas for innovation that pose benefit both to the company and society.

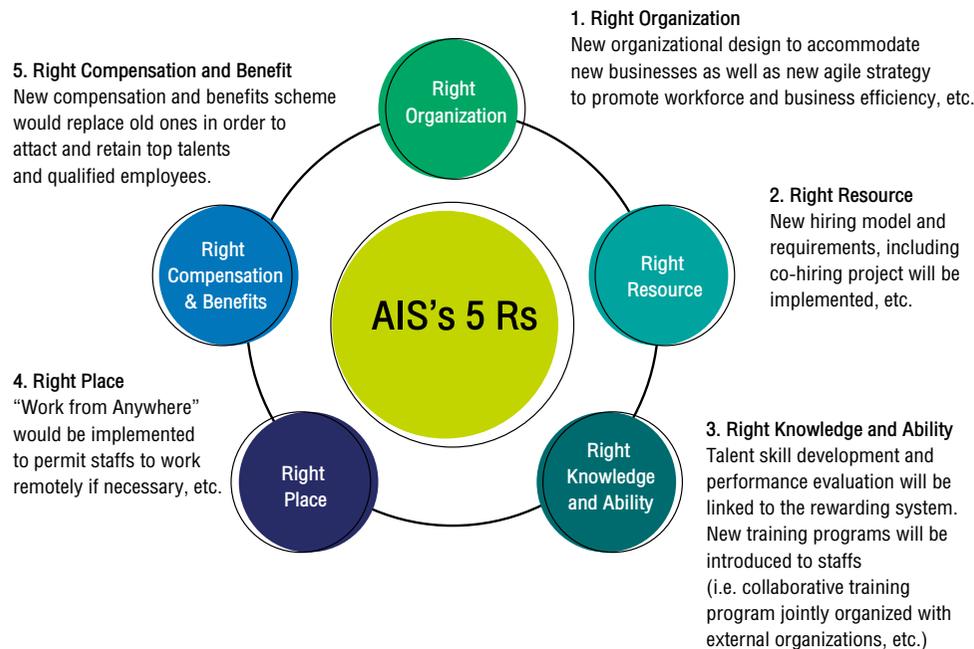
Management Approach (GRI 103-3)

AIS devotes great importance to human capital management. Its Chief Executive Officer (CEO) oversees operational policies enacted under the supervision of the Chief Human Resource Officer (CHRO), who interprets such policies into strategies and work plans, making sure to comply with relevant laws and with consideration to human rights. Focus is placed on providing opportunities for employees to fully showcase their abilities and potential for driving the organization forward towards sustainability while fostering an organizational culture aligned with its business practices under the concept "FIT FUN FAIR". Employees are encouraged to develop their skills in response to the digital challenges of the business and the company's objectives are clearly communicated. Details of the approach are as follows:



The 5 Rs Strategy

The Human Resource Department has developed a strategy for human capital management geared towards efficiency and applying the full potential of staff to the company's competitiveness. The 5Rs strategy is based on an assessment of the company's surrounding environment, Thailand's domestic economy, competition & consumer demands as well as accounts for short and long term company goals.



AIS also applies sustainable development goals to its human capital management in the following ways:

1. Talent Attraction, Retention and Succession Plan

1.1 Fair Employment

AIS adheres to fair employment principles and complying with all applicable laws as well as sees the importance in having a diverse workforce populated by personnel with different bases of knowledge and skills. The company maintains a policy against employing child and all types of illegal laborers while supporting the employment of disabled persons and providing funds to the Disabled Persons Support and Quality of Life Development Fund, seeking to have disabled employees work in the communities most convenient to them and for them to acquire new abilities in the digital technology industry.

1.2 New Ability

AIS maintains an approach for managing distinctly talented employees within the organization. Such individuals are sought out, provided with appropriate positions and duties and developed and fostered so that they may be retained in the company.

1.3 Digital Skills Hiring

AIS works with leading universities both domestic and abroad to organize activities that introduce itself and open the opportunity for students with functional skills for the digital age such as block chain, AI and data analytics to join the company and enhance its digital growth capability sustainably.

1.4 Career Development

AIS supports its employees in contributing to its growth plan and developing their career capabilities. Employees are provided with data and advice from their superiors so that they may plan their careers and support their own sustainable development.

1.5 Employee Retention

AIS maintains practices to retain and encourage skilled employees to remain and grow alongside the organization, including providing incentives both monetary and non-monetary and strong benefits to employees at levels such as health insurance and a standard meeting healthcare center.

1.6 Succession Plan

Ensuring continual operation, AIS maintains succession plans for every position throughout its structure using a criteria and process that transparently and fairly selects the most capable successor for any position with an emphasis on leadership capability and readiness to assume the role.

2. Lifelong Learning

AIS supports its employees in enhancing their skills and knowledge for growth in their careers and diversification beyond their base skill set in line with the changes spurred by the digital disruption era. Through Lifelong Learning via both online and offline courses, AIS seeks to unlock the creativity of its employees and open them to constant learning and betterment towards greater efficiency. Various development and training programs are provided to AIS employees with a 70:20:10 development proportion applied as follows:

Proportion	Type of Development	Details
70%	On-Job Experience	Employees are allowed to take on challenging tasks to develop their innovative thinking and strategic thinking for problem solving. Experiential learning takes place in teams and individually as well as by collaborating with internal and external personnel.
20%	From Superiors	Guidance and review is carried out by superiors or line experts such as senior employees, trainers or advisers. Employees are encouraged to be creative and create innovations applicable to their work.
10%	Through Training	Employees are provided with training both online and in classrooms so that they acquire both theoretical and practical knowledge. Interactive workshops are staged to bring together staff from different departments and allow for exchanges of knowledge.

2.1 Employee Development and Training

AIS supplies necessary courses to employees via the Learn-Di and Read-Di applications, allowing them to engage in learning from anywhere and at anytime. The applications provide courses that cover digital technology relevant to operations, news and updates and serve as an online library for research and study. AIS designed its courses to develop its employees as follows:

Employee Type	Online	Offline
Managerial	LearnDi, ReadDi	Seminar, Workshop, Classroom
General Operations	LearnDi, ReadDi	Seminar, Workshop, Classroom
Functional	LearnDi, ReadDi	Seminar, Workshop, Classroom
Talent and Executive Track	LearnDi, ReadDi	Seminar, Workshop, Classroom, Executive Coaching
New Ability	LearnDi, ReadDi	Seminar, Workshop, Classroom

2.2 Individual Development Plans

Individual Development Plans were drafted in collaboration with the superiors of each employee. A Competency Model was also created based on collaborative analysis between the employee, their superior and the human resources team in order to lay a foundation towards career development.

2.3 Evaluating the effectiveness of training

AIS employs the Kirkpatrick Model, which measures results in 5 levels where level 1 measures satisfaction in participation, level 2 measures knowledge gained from participation, level 3 measures ability to apply acquired knowledge and behavioral changes post participation, level 4 measures the results of knowledge application and level 5 measures return on investment.

3. Employee Well-Being

The AIS human capital management policy encompasses the physical and mental health of employees both for the sake of employees themselves and their efficient work. The policy also promotes a positive environment within the organization. The Occupational Safety and Health Committee was formed to promote and support safety and health measures, enforce relevant legal regulations and policies and act as an administrative body for safety and health with an emphasis on promoting awareness and supervising related operations within the company. The committee's principle responsibilities are as follows:

- Enacting a strategy promoting good health among employees
- Reducing stress among employees
- Maintaining employee medical information privacy
- Promoting safe work environments
- Maintaining safety for contractors and sub-contractors
- Organizing occupational safety and health training courses
- Assessing occupational safety and health risks

4. Performance Appraisal

AIS devotes importance to performance evaluation and fair remuneration, undertaking performance appraisals 2 times a year, divided between:

- Appraisal of achievement of objectives and targets jointly set by superiors and subordinates.
- Appraisal of work behavior based on corporate culture

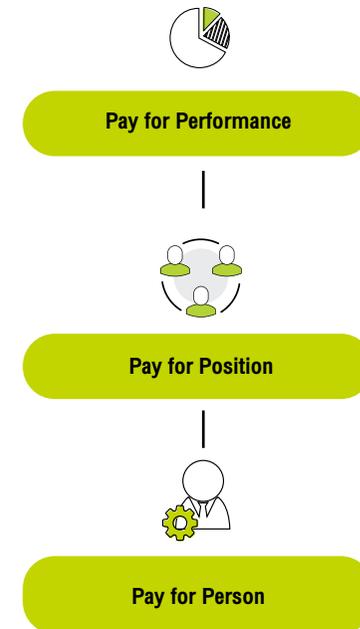
Appraisal results are used in considering remuneration and are communicated to employees for the planning of mutual sustainable development.

5. Remuneration and Benefits

5.1 Remuneration

Remuneration for employees is compared to in and out of industry rates with an emphasis on equality, relation to company returns and relevance to duties. AIS employs an external consultancy firm to design its crucial human resource systems, which includes improving remuneration calculation for great clarity, accuracy and fairness to keep up with changing contexts in the digital era. The firm also carries out surveys of pay and benefits in the labor market for comparison to AIS and monitors changes to criteria, benefits management and remuneration formats used by other industry leading companies for analysis and development of AIS remuneration in the interest appropriacy, enhancement of talent retention and attraction of future employees.

The 3 P policy for remuneration calculation utilized by AIS



5.2 Employee Benefits

AIS provides a range of benefits to its employees such as marriage support funding, educational funding for employee children that meet performance criteria, assistance funds for accident victims, patient visitation funding, funeral services assistance funding, natural disaster assistance funding, loyalty rewards, health check ups, medical care, life insurance, etc.

6. Diversity and Inclusion

AIS devotes importance to diversity and equality and provides employment opportunities to people of all ethnicities, beliefs, genders and ages while maintaining Zero Tolerance for prejudice and a Non-Discrimination Practice for all employees. In its business operations, AIS sees diversity as beneficial, as staff with differing experiences and skills are able to complement one another, and makes sure to create opportunities for exchanges of ideas to enhance its innovations, operations and service capability, using Design Thinking to highlight the strengths of its employees.

7. Application of Technology to Human Capital Development

AIS uses digital technology to enhance the efficacy of its human capital development. The company developed an application tailored to the various uses of its employees and that is accessible at all times from any location. Through the application, AIS staff can view their personal information and privileges, manage scheduling, seek various authorizations and follow up on company news and announcements in a convenient and flexible manner.

2020 Progress

The past year came with the challenge of operating amidst the COVID-19 crisis. The human resources department found it necessary to apply technological solutions to finding potential employees, publicizing positions and receiving applications via QR Code and holding employment interviews via video conference to avoid contact. At the same time, AIS supported all of its personnel to undergo training to enhance their ability to respond to challenges and competition, emphasizing new skills needed for modern tasks such as Design Thinking and Data Analytics while also encouraging employees to update their existing skills for the modern context such as by utilizing digital systems to automatically carry out tasks such as filing travel reports. Knowledge of the digital realm was emphasized in light of the company's evolution.

1. Talent Attraction, Retention and Succession Plan

In 2020, AIS made preparations to transition itself and its employees into the 5G era. While looking to retain quality personnel into the long term, the company made plans to find new staff, using technology for searching as well as interviewing potential recruits. Activities were organized in cooperation with 18 universities to introduce AIS and its opportunities. Attracting 2,583 applicants, AIS offered post-graduation positions to the most ideal candidates and plotted their career growth. The "AIS Career Framework" was also created to serve as a tool for guiding recruits and their superiors along a clear growth plan and helping to identify those with a potential for future growth in the company.



2. Lifelong Learning

In 2020, AIS Academy launched an online learning platform for the Thai people dubbed “LearnDi for Thais” aimed at allowing all people in the country to access knowledge at anytime from anywhere, elevating and modernizing learning in Thailand. LearnDi for Thais encompasses business, technological and financial knowledge among other topics and is intended by AIS to extend the capabilities of its employees to wider society and to become a sustainable digital learning platform.

AIS supports its employees in enhancing their abilities for greater work efficacy and provides courses based on its human capital development plan and operations year-round:

- **General operations courses** encompass all employees and include orientation, legal compliance and fundamental skills such as effective salesmanship, English communication, etc.
- **Managerial courses** focus on developing leaders and include Situation Leadership, First Line Manager and Second Line Manager.
- **Functional courses** focus on particular operational tracks such as salesmanship and customer relationship building and retention.
- **Compliance courses** obligated by law include safety training and basic firefighting.

- **Talent, or high potential executive track employees courses** are organized in collaboration with leading domestic and international universities to ensure responsiveness to the company’s changing context including Harvard Business, University of Manchester and South East Asia Center (SEAC). Courses were developed for 4 Talent groups divided by roles and positions in the company and were aimed at preparing them for succession or growth towards executive positions.
- **Technological Skill Development courses** such as micro:bit basic innovation to provide employees basic micro:bit programming skills for equipment manipulation. Technical Knowledge Management (TKM) has continued to develop courses for the development of technological skills.
- **Succession Plan courses** that include a training period with the outgoing executive in which duties are handed over and understanding is provided in the interest of a smooth transition by the successor.

AIS Academy for Thais

AIS is intent on playing a part in bettering the Thai people and devoted its resources to AIS Academy for Thais: Jump Thailand, a special activity that took place on 1 October, 2020 as part of the “Thinking for Others Mission”. The aim of the event was to provide knowledge and support sustainable innovation through enhancement of education and the creation of career opportunities for Thais in need. The event was divided into the following three activities:

1. **Jump to Innovation** Selection of an individual or group with an innovation for better life in Thailand to take part in JUMP Thailand, so that the innovation can be developed for practical application in 2021.
2. **Jump over the Challenge** Seeing the need for career opportunities amidst the COVID-19 crisis, AIS created the “Aun Jai Career Development” project in 2020, allowing interested people to undertake work training and providing them a chance to earn income in spite of economic contraction.
3. **Jump with EdTech** AIS developed the “LearnDi for Thais” platform to facilitate lifelong learning, working with public and private educational agencies both domestic and foreign to enhance the capacities of the Thai people.

3. Employee Well-Being

Throughout 2020, the human resources department at AIS worked to prevent the spread of COVID-19 by escalating occupational safety and health measures across the company and altering strategies and operations based on safety concerns. Human resources in the company were accordingly developed in other aspects as follows:

3.1 COVID-19 Prevention Measures

COVID-19 Alerts and Reporting: AIS created a procedure for issuing alerts and reports on the COVID-19 situation encompassing infections among its own employees. Staff who are diagnosed with COVID-19 are obligated to report the situation to their direct superior and the company's Emergency Report Center as to notify executives and relevant units and trigger set measures, which include investigation of close contacts, closure to risk areas for disinfection, notification of the Department of Disease Control and patient monitoring.

Implementation of Urgent COVID-19 Prevention Measures

- Employees were asked to avoid international travel. Those with a necessity for travel abroad were required to submit a request to a high level executive and have their plan considered on a case-by-case basis.
- Employees returning from countries deemed at-risk were required to enter into a 14-day quarantine during which any necessary work would be done from home.
- Personnel from foreign business partners arriving from countries with COVID-19 outbreaks were not allowed onto company premises unless a formal notification including travel history and the results of a medical screening were submitted and the visit was approved by an executive.

Office Congestion Reduction Measures

AIS implemented a Business Continuity Plan (BCP) in response to COVID-19, dividing employees into a Team A and Team B and rotating the teams into offices to reduce congestion from May of 2020. Staff not present in offices were allowed to work from home while those on-site had to adhere to social distancing measures in areas such as conference rooms, libraries, canteens and elevators.

Technological Support

AIS applied technological support to its operations in response to COVID-19. An online meeting system was launched to facilitate conferencing, notifications to staff were made via online channels and all personnel were allowed to submit work and ideas electronically.

Screening and Hygiene

Highest level health screening and control was implemented across the company. Thermo-scan machines were installed at all company entrances to check body temperatures and any individual found with a temperature 37.5 degrees Celsius or higher was denied entry. Disinfectant hand gels were placed in key locations alongside signage recommending usage, air filters

were placed in different locations and strict cleaning measures were undertaken with greater frequency such as every 30 minutes for elevators. Important equipment was disinfected every hour using industry standard disinfectants and Air Handling Units (AHU) were regularly disinfected to maintain the sanitation of circulated air.

3.2 Employee Welfare

• Scholarships for Employee Children

AIS has continued to provide scholarships to the children of its employees, providing 6,000 Baht to primary school students who meet its criteria and 8,000 Baht to secondary school students. Over the past year, the company provided a total 7,148,000 Baht to employee children who met its criteria and displayed academic excellence.

Subjects	2018	2019	2020
AIS Staff Children to Receive Scholarships (Person)	948	1,004	1,052
Scholarship (Baht)	6,364,000	6,772,000	7,148,000

- **Support for the Family Unit**

AIS acknowledges and supports the family unit as a foundational institution for personal growth and social sustainability. The company provides 4,000 Baht in assistive funding to employees who enter into marriage.

- **Amendment to Employee Regulations towards Improved Privileges in Compliance with the 2019 Labor Protection Act**

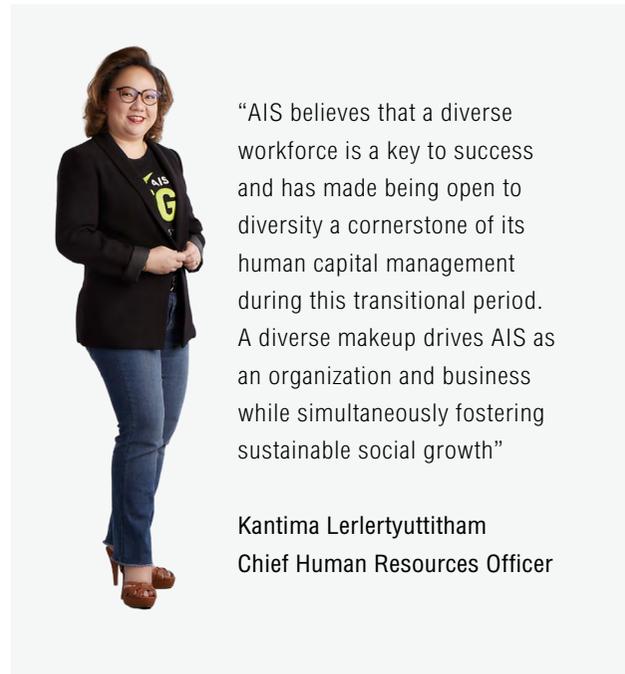
- Female employees allowed 98 days of maternity leave with maximum 45 days of pay.
- Compensation increase for employees of 20 years and over equal to their latest salary within 400 days.
- In the event of a company relocation, employees who are significantly affected or have family that are significantly affected can file a notice to the company within 30 days to receive compensation no less than their compensation rate.
- Remuneration, overtime and holiday pay in accordance with the Labor Protection Act with no discrimination between male and female employees based on gender.

- **Employee Engagement**

AIS conducts an Employee Engagement Survey every two years to collect the opinions of its personnel for analysis and synthesis into administrative improvements and better human resource management. Due to the COVID-19 pandemic in 2020 however, the survey was delayed to 2021.

4. Diversity and Inclusion

AIS supports staff engaging in activities with which they are interested or proficient, providing funding and opportunities for all of its employees to join in such activities. The company promotes respect for personal rights and an acceptance of diversity with the goal of creating a work and collaboration environment of solidarity.



“AIS believes that a diverse workforce is a key to success and has made being open to diversity a cornerstone of its human capital management during this transitional period. A diverse makeup drives AIS as an organization and business while simultaneously fostering sustainable social growth”

Kantima Lerlertyuttitham
Chief Human Resources Officer

5. Application of Technology to Human Capital Development

AIS sees the importance of developing its systems and applying technology to its human capital management, so that it can serve its employees quickly, precisely and with flexibility, as well as so that it can enhance human resource data analysis for the improvement of operations.

WorkDi

In 2020, the WorkDi system was developed to allow AIS employees to carry out various actions from any location at any time. Through the system, employees can declare leave, request overtime compensation, view total training time, receive information and notifications from the company, etc.

AIS DIGI

For 2020, AIS developed the AIS DIGI application to facilitate employee participation in company activities such as the LiFE system. Allowing employees to take part in an online society, activities were divided by the company’s FIT FUN FAIR concept with participation awarding token points redeemable as discounts on products and services. AIS DIGI also provides news, notifications and promotions for employees, the ability to book conference rooms, access to the AIS Idea Portal and connection to the E-Memo system, where authorization for various tasks can be requested.

AIS KinDi (Canteen)

A canteen provided for AIS employees, diners are able to pay for meals using the wallet app to receive KinDi coupons providing discounts on future purchases.

Performance Table (GRI 401-1, 404-3)

Subjects	Unit	2017	2018	2019	2020
Total Employees	Persons	11,884	12,314	*12,701	14,103
Breakdown by Gender					
Male	Persons	4,810	4,985	5,141	5,640
Female	Persons	7,056	7,329	7,560	8,463
Breakdown by Age					
50 Years and Above	Persons	463	554	524	687
30-50 Years	Persons	6,894	7,024	7,349	8,395
Below 30 Years	Persons	4,527	4,736	4,828	5,021
Breakdown by Employee Type					
Permanent					
Male	Persons	3,884	3,999	3,774	4,099
Female	Persons	4,969	5,049	5,004	5,258
Contracted					
Male	Persons	926	986	1,367	1,541
Female	Persons	2,045	2,280	2,556	3,205
Breakdown by Employee Level					
Top Management					
Male	Persons	115	125	123	129
Female	Persons	68	72	64	72
Middle Management					
Male	Persons	1,627	1,643	1,655	2,528
Female	Persons	1,703	1,725	1,742	2,829
Operational Staff					
Male	Persons	3,068	3,217	3,363	2,969
Female	Persons	5,243	5,538	5,714	5,559

Subjects	Unit	2017	2018	2019	2020
Other Performance					
Voluntary resignation (permanent)	Persons	673	701	758	475
Ratio of voluntary resignation to total permanent employee	Percent	7.80	8.00	8.60	5.10
Percentage of evaluated employees	Percent	**100	**100	**100	**100
Employees with Disabilities	Persons	120	123	*112	202
Employees that participated in AIS wellness program	Persons	7,024	18,336	*20,335	7,904
On-the-job fatalities	Persons	0	0	*0	*0
On-the-job injuries	Persons	0	1	*1	13
Average sick leave	Per Person (Days)	3.11	2.78	2.60	1.83

Remarks:

- * AIS employee data as of 31 December, 2020 taken from the Workday system and Advance Contact Center Co. Ltd. HR Department database
- * AIS used its Internal Communication database to record participation in the AIS Wellness Program in 2020. Due to the COVID-19 pandemic situation in 2020, implementation of the program was limited. In 2019, 1 employee was able to participate in more than 1 activity, resulting in higher participation numbers than previous years.
- ** All employee (including age, gender, employee level, and employee category) covered in the regular performance reviews.

Employee Training

Subjects	Unit	2018	2019	2020
Total Hours Training	Hours	1,332,020	622,144	523,110
Breakdown by Gender				
Male	Hours	440,869	229,610	181,302
Female	Hours	891,152	392,534	341,809
Breakdown by Employment Type				
Permanent	Hours	683,280	345,259	317,887
Male	Hours	286,547	173,066	139,189
Female	Hours	396,733	172,193	178,698
Temporary	Hours	648,740	276,885	205,224
Male	Hours	154,321	56,544	42,113
Female	Hours	494,419	220,341	163,111
Breakdown by Employment Level				
Top Management	Hours	9,275	7,973	5,704
Male	Hours	6,213	4,572	3,581
Female	Hours	3,062	3,401	2,123

Subjects	Unit	2018	2019	2020
Middle Management		162,283	188,480	153,616
Male	Hours	95,490	99,093	75,448
Female	Hours	66,792	89,388	78,168
Operational Staff		1,1260,462	148,805	158,567
Male	Hours	339,165	69,401	60,161
Female	Hours	821,297	79,404	98,406
Average Hours of Training				
Total Hours Training	Hours/person	106	49	37
Breakdown by Gender				
Male	Hours/person	-	45	32
Female	Hours/person	-	52	40
Total Costs of Training & Development	Baht	156,138,765	203,297,705	118,454,138

Remarks:

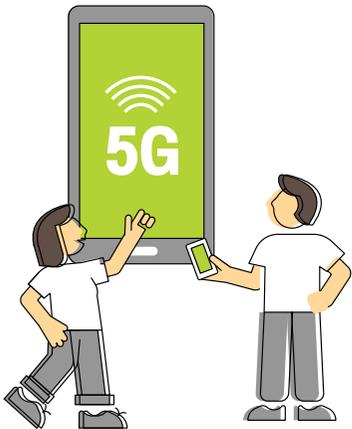
- Report limited to AIS employees that participated in AIS Academy
- AIS used the AIS Academy database to calculate the number of training hours undertaken by AIS employees using totals as of 31 December, 2020 accounting for hours spent reading in ReadDi (E-Book) and books borrowed from The Cultivation Library
- AIS Academy upgraded its training hour calculation formula in 2019 to match calculation standards used by TK Park in collaboration with the National Statistical Office

Social Inclusion

Leverage our digital infrastructure&solutions to uplift community well-being&reduce the digital divide

Target 2023

Improve the well-being of 700,000 people through our digital platform and collaboration



Significant Improvements in 2020

Topic of Development	Unit	2020 (Actual)	Target 2020	Target 2021	Target 2022	Target 2023
 Aor Sor Mor Online Application Usage	Users	528,857	200,000	600,000	650,000	700,000

- Collaborated with the Department of Disease Control under the Ministry of Public Health in support of the Aor Sor Mor Online Application used to survey household chemical usage nationwide for academic evaluation leading to prevention, precaution and control measures.
- Developed Aor Sor Mor Online Application to support screening and monitoring of COVID-19, allowing for real-time reports to be issued to Sub-District Health Promotion Hospitals, District Public Health Offices and Provincial Public Health Offices for the enhancement of provincial control measures. Between May and December 2020, supported the screening of 661,000 people.
- Developed Aor Sor Mor Online Application to support community mental health screenings in collaboration with the Department of Mental Health and Department of Health Service Promotion. Between November and December 2020, a total 589,505 people had their mental health screened using the application.
- Signed the MOU to publicize health news and knowledge via Aor Sor Mor Online Application in collaboration with the Department of Health Service Promotion with the intent to educate Aor Sor Mor so they could pass on their knowledge to the public.

Challenges & Opportunities^(GRI 103-1)

With various factors triggering rapid global change, such as a viral pandemic hiking the role of digital technology in work and daily life, adaptation for survival in the business realm has led to increased competition and the need for innovative products and services. In keeping pace with the world, Thailand has had to continually develop its communication technology infrastructure and is now ready to adopt 5G technology, which has the capacity for nationwide coverage to accommodate the lives and occupations of all.

While telecommunications networks currently cover 98% of the population, a disparity in usage between urban dwellers and remote rural residents still exists. The National Statistical Office found that 90% of the population uses mobile phones but only 57 million people use the internet for work and daily life, indicating inequality in access to digital technology with only city dwellers using smart phones and the internet for a wide range of benefits both personal and professional. Many communities also continue to worry about their health and safety when having to live near base stations. AIS, as a provider of telecommunications systems and digital technology, has seen an opportunity to use communication technology to better the lives and occupations of the Thai people and has supported appropriate access to technology across different communities, triggering economic and social growth. The COVID-19 pandemic further underlined the need for communication technology in daily life and work and provided opportunities for growth in the telecommunications business with the creation of new revenue sources and an enhancing of long term relations between AIS and communities.

Management Approach^(GRI 103-2)

AIS is committed to being a part of bettering life for the Thai people, using its communication technology resources to support developments that keep the Thai people in pace with the digital era. Leveraging its business and human resources for social and community development through a range of policies and projects, AIS maintains a Business Sustainable Development Team to recommend policies and strategies and coordinate with relevant agencies to realize results. The team reports progress to the Sustainable Development Committee. In recognition of inequalities in quality of life and opportunities for people in remote areas, in particular in terms of access to basic necessities and education, AIS set policies that mobilize its digital platforms and partnerships to achieve greater equality. Towards its intended achievement, AIS implemented the three following strategies:

1. Expansion of digital infrastructure for maximum coverage in support of efficient communication and alignment with national economic development

AIS is committed to developing a quality telecommunications network with nationwide coverage both in urban and remote areas and seeks to continually acquire new technologies to enhance its service capability, in particular to improve the capacity and coverage of 5G technology in satisfaction of demand and in support of the network being used to develop the nation's economy and households. Consideration is also given to the needs of the public telecommunications system.

2. Supporting appropriate public access to digital communication devices

AIS recognizes the need to develop Thailand in conjunction with the digital technology capabilities of the Thai people. In light of inequalities in quality of life and opportunities to access technology between different citizens, AIS maintains a policy to support digital technology access and digital technology knowledge for all Thais. Under this policy, AIS acquires and presents appropriate choices for accessing digital technological equipment including smart phones that accommodate 3G and 4G priced between 1,000 and 3,000 Baht, voice and data package for students and migrant laborers and sales channels targeted at specific groups, all in the promotion of internet access and digital technological know-how in every region.

3. Developing digital platforms that enhance economic and social structures along with quality of life

AIS aims to use its communication technology and digital capabilities to play a part in building tools that better the lives of the Thai people, focusing on connecting communication technologies and digital systems to better public health and education, to reduce inequality, to promote digital literacy and in support of the environment.

Public Health

Support and promotion of public health operations through the creation of digital platforms that aid in the efficient work of public health personnel, facilitating proactive efforts to address community health issues in a timely manner and approaches that prevent and mitigate injury and loss across the nation.

Reducing Inequalities

Creating equal opportunities for access to education targeting underprivileged households and youths, providing opportunities to access knowledge and communication technology that enhances capabilities and quality of life, supporting career opportunities for underprivileged groups as to sustainably close gaps in equality.

Digital Literacy Promotion

Support access to digital technology knowledge and practice through the provision of necessary resources to develop the capabilities of the Thai people and in support of results conducive to national development.

Environmentalism

Take responsibility towards environmental issues that could adversely impact communities and the nation, support and promote the management of waste and electronic waste generated by business operations and foster awareness among the Thai people of the dangers of electronic waste as to encourage them to take part in national environmental conservation.

2020 Progress

Development and Expansion of 5G Technology to Nationwide Coverage

At present, AIS operates a network that supports high-speed data transfers using 3G and 4G technology with coverage across 98% of the population, a broadband internet network built on fiber technology covering 57 provinces of the country and WiFi networks in support of educational institutions and businesses. AIS is currently rapidly expanding its 5G network and has reached 23% 5G coverage (as of Dec 2020), simultaneously carrying out research and tests of 5G technology in cooperation with the industrial sector and state to uncover the potential of the technology's practical application. Tests include using 5G to support public health efforts against COVID-19, utilizing 5G for logistics in collaboration with the construction industry and applying 5G to innovations that mitigate environmental impacts and realizing sustainable development goals. These tests serve as a starting point to using digital technology for national development.

Public Health

Aor Sor Mor Online application

The Aor Sor Mor Online application was launched to communities in 2015 with the objective of serving as a communication tool between sub-district health promotion hospitals and Aor Sor Mor, facilitating the proactive work of local level health service units. The application circulates necessary news and information and sends data from Aor Sor Mor to sub-district health promotion hospitals and district and provincial public health offices to provide a clearer picture of health situations and to inform appropriate health service planning, enhancing the capability of Aor Sor Mor through digital technology.

Details of Aor Sor Mor Online application can be found at <http://www.ais.co.th/aorsormor>

Development of Aor Sor Mor Online Application

Year	 Development	 Activities	 Users (Persons)
2015	<ul style="list-style-type: none"> Launched Aor Sor Mor Online application 	<ul style="list-style-type: none"> Press announcement of launch in collaboration with Lak Roi Health Promotion Hospital, Nakhon Ratchasima Community relations team carries out promotion and guidance at health promotion hospital 	200
2016	<ul style="list-style-type: none"> Report photography upgraded from black and white to color 	<ul style="list-style-type: none"> Use Aor Sor Mor Online application on AIS network for free Launch of www.ais.co.th/aorsormor 	1,500
2017	<ul style="list-style-type: none"> Developed GPS map system on the application 	<ul style="list-style-type: none"> Announcement of Digital for Thai vision supporting agriculture, education and public health The 1st Application use competition held in cooperation with Ministry of Public Health and Ministry of Digital Economy and Society (86 health promotion hospitals awarded) Online video manual created Usage expanded to district and provincial public health units 	1,200
2018	<ul style="list-style-type: none"> Available on iOS Developed the monthly disease situation report system on the application Developed the incident report system on the application for wider sample surveying 	<ul style="list-style-type: none"> The 2nd application use competition held in cooperation with Ministry of Public Health and Ministry of Digital Economy and Society (93 health promotion hospitals awarded) 	52,000
2019	<ul style="list-style-type: none"> Developed mosquito larvae survey system on the application Developed the data connection to Smart Aor Sor Mor online application 	<ul style="list-style-type: none"> Agreement signed with Department of Disease Control and Department of Health Service Promotion to support data on mosquito larvae populations on Aor Sor Mor online application Data link established with Department of Disease Control software “Tan Rabad” to prevent and mitigate impact of Dengue fever The 3rd application use competition held in cooperation with Ministry of Public Health and Ministry of Digital Economy and Society (123 health promotion hospitals awarded) 	110,000
2020	<ul style="list-style-type: none"> Developed the household chemical survey system on the application Developed the COVID-19 screening and monitoring system Developed the Mental Health screening system Notification of Department of Health Service Promotion News and Knowledge to Aor Sor Mor 	<ul style="list-style-type: none"> Provides Hero SIM Cards and insurance to Aor Sor Mor for supporting the report system of COVID-19 MOU signed with the Department of Disease Control, Ministry of Public Health to support use of Aor Sor Mor online application to survey household usage of chemicals nationwide MOU signed with the Department Health Service Promotion, Ministry of Public Health to notify Aor Sor Mor of health news and knowledge via Aor Sor Mor Online application MOU signed with the Department of Mental Health so mental health reports during the COVID-19 situation could be submitted via Aor Sor Mor Online application 	528,857

The year 2020 brought a major challenge to operations in the form of the COVID-19 pandemic. AIS turned its focus to safety and supported use of the Aor Sor Mor Online application to augment public health work during the crisis through these two ways:

1. Digital platforms were used to demonstrate use of Aor Sor Mor Online application

with conferences organized in cooperation with provincial public health offices to show how the application reports data relevant to monitoring COVID-19. The effort was expanded through the Aor Sor Mor network to over 10,000 people and was also applied to the Aor Sor Mor Online application Facebook Fan Page with live streams averaging over 5,000 views.



2. Contact channels were added to enhance work against the pandemic.

Hotline 06-2520-1999 was made available between 09.00 and 17.00 hrs daily (excluding government holidays) to provide guidance and answers to Aor Sor Mor and public health officials on use of the application. Line official @aorsormor was another channel and garnered 11,731 members while the Aor Sor Mor Online application Facebook Fan Page fielded issues and queries 24-hours a day.



3. Development of the Aor Sor Mor Online application in response to the COVID-19 crisis

- Screening and tracking of COVID-19 was added to the application. Surveys were added to aid Aor Sor Mor decipher contact and infection risks, including a travel survey, an initial 14-day risk survey and a present health survey. Sub-district health promotion hospitals and district and provincial public health offices were able to access collected data to inform precaution and control plans.

18 May 2020
 AIS joined hands with the Ministry of Public Health to enhance the work of Aor Sor Mor during the COVID-19 crisis, adding COVID-19 screening and monitoring functionality to the Aor Sor Mor Online application and providing life insurance to support proactive efforts by Aor Sor Mor.

- Mental health screening was added in collaboration with the Department of Mental Health and Department of Health Service Promotion, allowing Aor Sor Mor to screen community members for stress, depression and suicidal tendencies.



Additional Activities in Support of the Aor Sor Mor Online application Project



3 November 2020

AIS joined hands with the Department of Mental Health and Department of Health Service Promotion in signing MOU to develop “Mental Health Screening” functionality for the Aor Sor Mor Online application, empowering Aor Sor Mor to screen their community members for mental health issues brought on by the COVID-19 crisis.

3 January 2020

Aor Sor Mor Online application joined the Department of Disease Control under the Ministry of Public Health to sign a memorandum of agreement on use of the Aor Sor Mor Online application to survey household chemical usage nationwide with the goal of reducing illness related to contact with hazardous agricultural chemicals.

13 February 2020

AIS joined the Department of Health Service Promotion to provide health news and knowledge to Aor Sor Mor through Aor Sor Mor Online application with the intent of educating Aor Sor Mor so that they may pass on knowledge to the public.



23 June 2020

AIS joined hands with the Thai Red Cross Society to provide SIM cards and insurance to Aor Sor Mor, supporting their work preventing, monitoring and rehabilitating the nation from COVID-19.

Development Approach 2021

Supporting continued worked with communities and Aor Sor Mor, AIS focused on setting plans and strategies aligned with state policies, in particular those to do with public health, and collaborated with state agencies to integrate data on the Aor Sor Mor Online application for agencies under the Ministry of Public Health to inform disease prevention and mitigation plans for the nation. Growth in usage of the Aor Sor Mor Online application improved responsive to state policies and led to communities developing their skills and access to digital technology, prompting AIS to increase its user target for the application and to plot communication plans and approaches for better penetration of target groups as well as to seek out ways to attract AIS business partners to take part in supporting the Aor Sor Mor Online application for greater all-round effectiveness.

AIS 5G Battling COVID-19

Due to the COVID-19 pandemic situation, AIS, as a member of the Thai business sector, announced “AIS 5G Battling COVID-19”. The urgent mission of the project was to apply 5G technology and medical solutions to the crisis through three endeavors:

1. Installation of 5G Networks in Hospitals to Support Medical Work

hospitals nationwide, 150 in Bangkok and 8 in the provinces. The networks support medical work by allowing for innovations and solutions that reduce risks to medical workers while facilitating their care of COVID-19 patients. Additional AIS Fibre, 4G, AIS Super WiFi and Smart devices were also provided to enhance management in various areas at the hospitals.



2. AIS Robotic Lab

Digital technology experts from within and beyond AIS were brought together to develop a 5G telemedicine robot and medical solutions through collaboration with hospitals to ensure responsive to their specific needs.

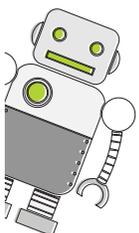


3. Development of 5G Telemedicine Robots

AIS produced 23 new Robots for Care and delivered them to 22 hospitals in May, 2020, including King Chulalongkorn Hospital, Rajvithi Hospital, Siriraj Hospital, Ramathibodhi Hospital, Siriraj Piyamaharajkarun Hospital, Bamrasnaradura Infectious Diseases Institute and the Naval Medical Department. All of the facilities were testing and caring for COVID-19 patients and utilized the robots as assistants to doctors and nurses, performing thermos-scans and facilitating video calls between doctors and patients. Controlled via 5G, the robots eased the work of physicians while reducing crowding and risk of infection for both patients and medical workers.



*New 5G ROC-ROBOTS FOR CARE
Assisted doctors and nurses to reduce workload and risk*



Reducing Inequalities

Education

AIS Good Kids Brave Hearts

From 2001 – 2020, the AIS Good Kids Brave Hearts project supported exemplary students hindered by their finances with the aim of reducing social inequality and providing opportunities for education to Thai youths so that they may find employment and support themselves and their families. Students chosen showcased exemplary behavior from Primary School Year 1 through to their bachelor's degree and worked to provide supplemental income to their family. Across the 20 years of the project, AIS provided scholarships to a total 910 students.



Post Graduate Professions of AIS Good Kids Brave Hearts Project Scholarship Recipients

	Amount (Persons)
 <p>Doctors and Nurses</p>	15
 <p>Engineers and Architects</p>	11
 <p>Teachers</p>	34
 <p>Police</p>	10
 <p>Other</p>	163

Impressions from AIS Good Kids Brave Hearts Students

“The future is not about one’s fortune but one’s actions in the present”

“I am currently an expert technician for AIS but I wasn’t hired because I took part in the program, everyone here was hired using the same criteria. I want to say thank you to AIS for allowing me to continue dreaming and to reach this point. My goal is build a family and care for my mother as best I can”



**Narin Kawinwachara,
from Tak province**

Currently an Expert Technician at a Maintenance Center of Advanced Info Service Plc.

“A scholarship is an opportunity”

“I owe a big thank you to AIS, which didn’t just provide me with a scholarship to complete my under graduate degree, but that followed up on my progress. We have a LINE group of past and new members named AIS for the Strong Willed where we give each other guidance. I sincerely thank AIS for giving me the will to get where I am today”



**Asst. Prof. Dr. Netnapha Chana,
from Phattalung province**

Currently a chemistry instructor at Thaksin University, Phattalung Campus

Development Approach 2021

Over the 20 years AIS has been conducting the AIS Good Kids Brave Hearts project, the goal has remained supporting young Thais to complete their bachelor’s degrees and enter into a career, making it a major success. In the long term, AIS understands Thailand will need individuals with specialized skills to support its development and economic growth and has thus set a policy to support education that aligns with the 12th National Economic and Social Development Plan, which seeks to create innovations that drive development in all dimensions and enhance the country’s capabilities. The plan requires skilled individuals with interests in science, technology, mathematics and computer science. The project will thus support students with coinciding interests, giving particular consideration to those with exemplary behavior but are hindered by their finances and that are committed to assisting their families by finding employment as these individuals will fuel national development.

Reducing Inequality and careers for the disability

AIS Call Center for the Disabled

AIS recognizes the need to support human rights efforts and provide equal access to employment, launching a project to create career opportunities for the disabled in 2007 focused on using digital technology to augment the capabilities of disabled individuals and employing such individuals in its Call Center. Work environments and equipment were adapted to facilitate safety and convenience for disabled employees and they were provided with equal remuneration and benefits to their able-bodied counterparts. Details of the company's employment of disabled persons is as follows:

1. 20 Disabled Employees are stationed in Bangkok

- 12 visually impaired employees contact customers to present products and services
- 8 hearing impaired employees operate the AIS Deaf Contact Center, serving hearing impaired customers via LINE Video

2. 90 Disabled Employees are stationed in the provinces and were hired through collaboration with schools and foundations for the disabled with the emphasis being finding them employment near their homes. 46 are visually impaired and 44 are physically disabled.

Office Amenities for Disabled Employees



- Visually impaired employees are assisted by the PPA (Thai language Text to Speech) program, motion sensor keyboards and screen readers, which allow the employees to efficiently and conveniently operate computers.
- The AIS Deaf Contact Center serves hearing impaired customers via video call with sign language experts evaluating the efficacy of service employees.
- Elevators, lavatories, ramps and hand rails were adapted to facilitate the safe and convenient work of disabled employees.

Through accommodation of disabled employees and their own dedication at the AIS Call Center, AIS disabled employees received the Best Support of the Year 2020 award at the ACC BEST OF THE YEAR 2020 ceremony. Acknowledging AIS Call Center as generating career opportunities for the disabled, the company also proudly received the Excellent Organization for Supporting Disabled Employment 2020 from the Ministry of Social Development and Human Security.



Digital Literacy

SDG Lab by Thammasat University & AIS



AIS joined hands with Thammasat University to establish “SDG Lab by Thammasat & AIS” and Asia’s first ever sustainability operation center at Thammasat University Rangsit campus’ Puey Ungpakorn Centenary Hall and Park under the concept of integrating 5G and IoT digital technologies to form a foundation for sustainability and to serve as a space for experiments and actualization by creators and inventors, leading to the development of innovations and the adaptation of technologies for addressing various environmental issues with the ultimate goal of elevating Thailand into a SMART City. The scope of the undertaking comprises:

- 1) Climate & Environment-Developing environmental sustainability using 5G technology
- 2) City-Developing transport systems and security systems by adapting 5G technology to accommodate sustainable urban development.
- 3) Living-Develop sustainable living through energy, natural resource, waste and electronic waste management.
- 4) Farming-Develop technologies for sustainable agriculture and food security.
- 5) People-Promote public participation in sustainable development.

Objective :

Serve as a space for learning and actualization that creates opportunities and connections between innovators, developers and inventors from across the globe with the goal of addressing environmental issues or the goal of creating sustainability innovations that can serve as models for practical solutions.

Technology :

Highspeed internet networks 5G, IoT, Fibre and AIS Super WiFi; cutting edge equipment that empowers the center to create its own model innovations and carry out both network and practical tests. For further details, view <http://www.sdglabthailand.com/>

Model Innovations

- IoT devices that automatically control cultivation and a weather station that monitors PM2.5 levels positioned at the rooftop farming plot of Puey Ungpakorn Centenary Hall and Park controlled via a Smart Farm system allowing for effective water management.

- In the future, AIS 5G will be applied to managing areas of Thammasat University Rangsit Campus, such as its traffic using Smart Parking and Autonomous Cars, transforming the institute into a fully-fledged Smart University.



We see 5G and IoT as technologies of the future and are dedicated to applying them to environmental conservation and social betterment as well as to creating a foundation for Thai innovation.

Telecommunications Systems for Community Development

AIS recognizes inequality in digital technology access, especially for education among students in remote areas. A key factor in this issue is insufficient infrastructure and is why in the year 2016 AIS joined hands with the Border Police Headquarters to commence the Telecommunications Systems for Community Development project aimed at enhancing internet networks and providing computers for education alongside other technologies to better basic utilities for communities. The thrust of the undertaking was to use telecommunications to upgrade the quality of life for Thais in remote locations, especially in terms of education, bringing news and perspectives from the wider world to students so that they could apply their knowledge in their hometowns. The endeavor also empowered border communities to communicate wirelessly and supported work under the Village Health Volunteer Online application project, which assists localized public health workers and volunteers to provide effective service. In 2020, the effort resulted in:

- Solar-powered lamp kits being provided to Ban Huay Pum Learning Center in Phayao province and Ban Kirilom in Prachuapkirikan province. Students and nearby residents were able to charge their electric lamps using the kits for use at home or in night-time work.

- Collaboration with the Information Technology Foundation under the Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn, National Science and Technology Development Agency and Provincial Electricity Authority in the “ICT for Lifelong Learning in Border Communities under Royal Initiatives by Her Royal Highness Princess Maha Chakri Sirindhorn Project”, in which 10 computer desks, a router and a set of SIM cards were provided to the Ban Mae Chanta Border Police School in Mae Chan sub-district of Um Pang district in Tak province for use in education and student access to digital media as well as communication by nearby residents.



Performance Table



Public Health	Unit	2017	2018	2019	2020	Target 2020
 Aor Sor Mor Online App Users	Users	22,000	52,000	116,000	528,857	200,000
 Reduction of Paper Usage by Aor Sor Mor	Piece	184,000	312,000	3,700,000	10,168,808	7,600,000
 Reduction of Fuel Usage by Local Health Promoting Hospital	Baht	12,000,000	31,200,000	40,368,000	180,342,648	69,600,000

Cyber Wellness and Online Safety

Established a brand that promotes safe and appropriate use of the internet and social media

Target 2023

- Become Thailand’s number one telecommunications brand, trusted for cyber wellness and online safety.
- Promote cyber wellness and online safety at 1,500 schools and protect 290,000 Thai users from cyber threats.

Significant Improvements in 2020

- Joined hands with the Faculty of Industrial Education and Technology of King Mongkut’s University of Technology Thonburi to consult on Digital Quotient (DQ) with the Office of the Basic Education Commission (OBEC) as to equip teachers for dispensing the knowledge in primary schools nationwide as to enhance the DQ and digital skills of Thai children.
- Expanded the user base of AIS Secure Net to 124,600 and added 114 schools participating in DQ course, resulting in accumulated 492 schools.

Challenges & Opportunities ^(GRI 103-1)

The current widespread use of the internet has made cyber threats a common issue of concern across the globe with dangers such as identity theft, internet addiction and cyber-bullying just a few examples. Within Thai society, public and private health, technology and social entities have turned their attentions to these threats. AIS, as a telecoms operator perceived as a purveyor of digital technology and internet usage, has an undeniable role in promoting cyber wellness and online safety and has the ability to play a part in promoting digital technology usage that is beneficial to the economy and society. By shaping appropriate digital era behaviors in Thailand, AIS can curtail online dangers, in turn supporting the telecommunications business to grow, reduce threats to the company’s own reputation and foster consumer loyalty to the AIS brand. Moreover, in tackling these challenges, the company has the opportunity to innovate new products and services for the enhancement of online safety in Thailand.

Management Approach ^(GRI 103-2)

“Cyber Wellness and Online Safety” is a significant factor toward the sustainability of AIS. The company maintains a Cyber wellness and Online Safety committee that reports directly to the Chief Executive Officer. The body comprises knowledgeable and experienced individuals from the realms of corporate image and sustainable development, community relations, corporate brand management, product development, systems engineering, telecommunications security and user information protection, who meet monthly to develop and expand projects. AIS is determined to protect the Thai people from cyberthreats as well as to promote online safety and focuses on vulnerable groups of youths. Its three main strategies under the “Aunjai CYBER” program includes digital quotient promotion, digital tools for cyber protection and promotion of awareness against the potential dangers and impacts of the internet and technology.

2020 Progress

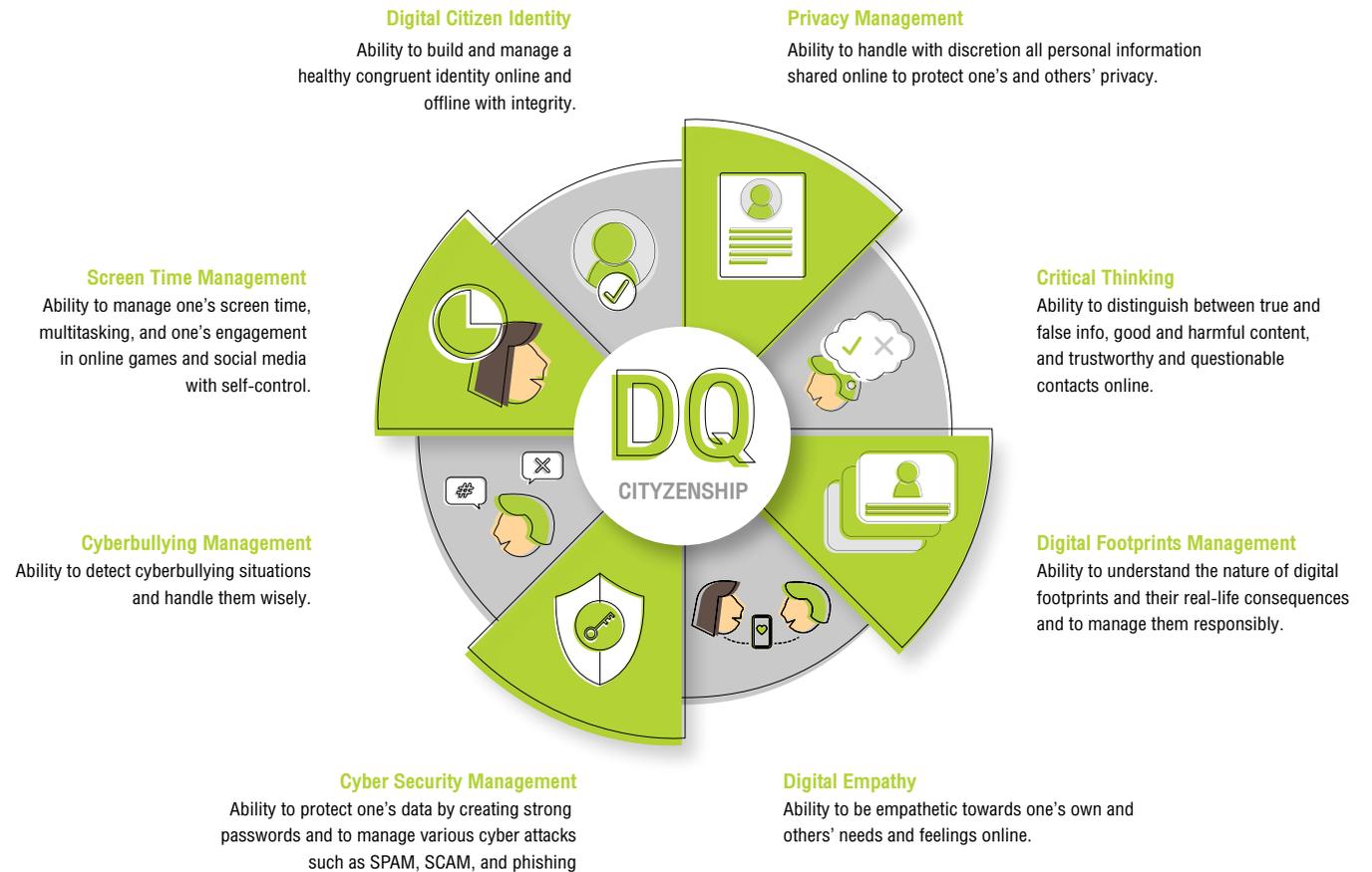
AIS expanded upon its cyber wellness support following the declaration of its vision and unveiling of “Aunjai CYBER” in 2019, emphasizing partnerships in the educational realm, relevant organizations and experts in child and adolescent psychology with the intent to better reach its target audience and effectively raise awareness on cyber wellness, promoting Digital Literacy and Cyber Security in the following ways:



Digital Quotient Promotion (Digital Literacy)

AIS joined hands with DQ Institute to formulate a Thai language Digital Intelligence Quotient (DQ) course consisting of a test and online lessons measuring and building 8 DQ skills among children aged 8-12 years, providing them the necessary knowledge to productively traverse the online world and internet. The project received measuring metrics for digital proficiency from world-class organizations World Economic Forum, Organization for Economic Co-operation and Development (OECD) and IEEE Standards Association (IEEE) and was disseminated to over 110 countries worldwide. AIS also collaborated with Thai educational institutions to instil knowledge and understanding in Thai youths using the courses.

8 Digital Intelligence Quotient Skills



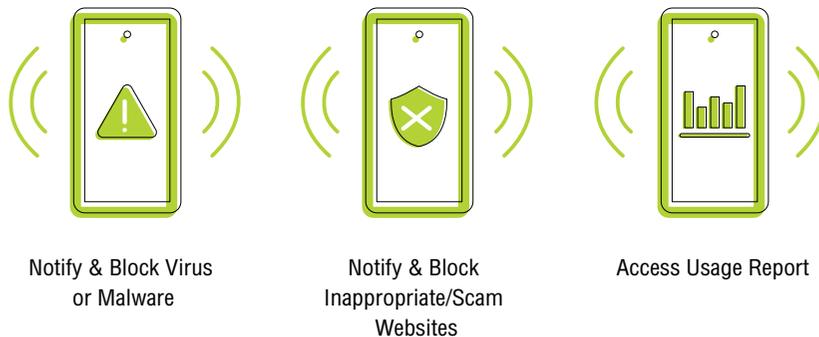
Digital Tools for Cyber Protection (Cyber Security)

AIS offers the network-based security solution AIS Secure Net to assist in effectively reaching customers at risk from cyberthreats by working instantly without the need for an application download. Moreover, the company partnered with Google to promote use of its Family Link application, aiding guardians in training their children on appropriate internet usage.

AIS Secure Net



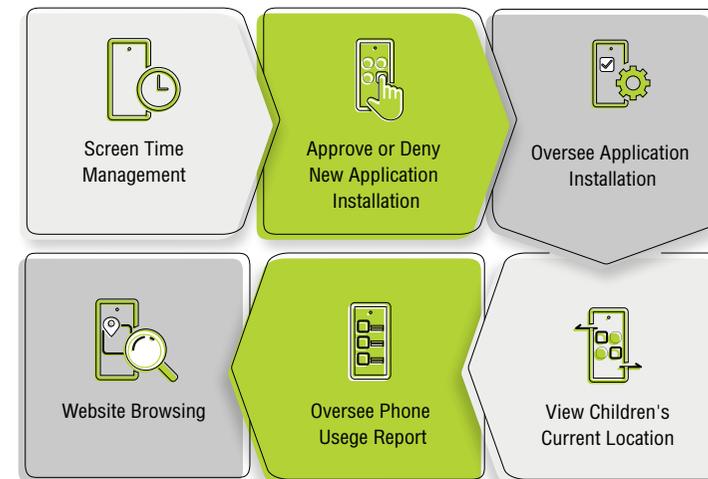
AIS Secure Net is a protection and notification system against cyberthreats such as virus-infected websites and malware as well as an online filter for children and adolescents able to protect against pornography, narcotics, gambling, etc. built into the AIS internet network to avoid the need to download an application. The service is divided into 2 types based on user requirements, namely; AIS Secure Net for general users and AIS Secure Net Kids for children 5-12 years in age.



Family Link



Family Link is an application that allows guardians to manage the safe usage of their children's smartphones with cooperation from Google. The application trains children in appropriate smartphone usage with functions such as phone call limitation and reports, new application installment management, website access and location monitoring, all together creating a constructive safety barrier around a child's digital life.



In 2020, AIS continued to support cyber wellness among Thai youths through DQ courses and providing cyber wellness tools such as AIS Secure Net and AIS Family Link. With the COVID-19 outbreak situation delaying school semesters and moving students to online classes, AIS decided to adapt its strategy to publicizing the Aunjai CYBER program through digital channels including the myAIS application, AIS PLAY and Facebook, as to reach targets on every network. Efforts focused on families alongside teachers to forge an immunity for Thai youths in the digital era spending more time in front of digital screens amid the pandemic instead of only teachers through training courses. Nonetheless, AIS organized online courses for teachers to bolster their understanding of DQ and dispatched community relations teams to work with the teachers to design activities and formats so that DQ could be included into normal lesson plans. AIS also built an online community comprising teachers from participating schools with the purpose of inspiring and exchanging experiences.

AIS remains determined to set off wide social change in terms of awareness of constructive and sustainable ways to contend with cyberbullying. Online seminars open to the general public



via Facebook and YouTube under the topic “Empathy is the Key: Understanding Others and Not Jumping to Judgement” allowed members of the younger generation to share their views and experiences on cyberbullying. The sessions sought to dispense ideas for long term ways to handle cyberbullying and garnered 85,000 live views.

In 2020, over 35,000 students from 114 schools participated in AIS DQ courses, more than 124,600 individuals became users of AIS Secure Net. Moreover, AIS extended its cyber wellness effort from mobile internet to highspeed home internet, testing AIS Secure Net via AIS Fibre to ensure consistent internet speed and quality while protecting users from cyberthreats. The company expects to officially rollout the service in 2021.

In the year 2021, AIS plans to continue supporting Aunjai CYBER so that it may spread awareness of cyber wellness to new schools and will invite public agencies to join its network and take part in developing a Cyber Wellness Online Learning Platform can serve as a hub for DQ knowledge and enhancement for Thai youths and the general public. The company will also expand AIS Secure Net from mobile internet users to home internet users for further protection from cyberthreats.



Performance table

Subjects		Unit	2019	2020	2023 Target
 Digital Quotient Promotion Aunjai CYBER participants	Students	43,200	35,000	-	
	Schools	378	114	1,500 ¹	
 Digital Tools Against Cyberthreats² AIS Secure Net	Users	47,600	124,600	290,000	

Remarks:

1. Revised target from 2,000 schools by 2022 to accumulative 1,500 schools by 2023 due to Covid-19. AIS expanded DQ through online channels to partly offset the slowdown DQ adoption at schools.
2. Exclude Family Link application users



Environment



Emissions



Waste Management

Emissions (GRI 302)

Reducing GHG emissions and utilize renewable energy in most possible extent in our operation

Targets 2023 (GRI 305-5)

- Reduce GHG emissions intensity as calculated from the ratio of direct (GHG scope 1) and indirect (GHG scope 2) emissions to data traffic (tCO2e/terabit or ton carbon dioxide equivalent per terabit) by 90% compared to the baseline in 2015.
- Increase renewable energy usage to 5% of total energy consumption compared to 0.06% in 2018.

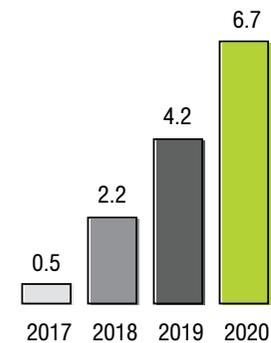


Significant Improvements in 2020

- Continually increased energy efficiency by further installing multi-mode base station equipment, enhancing rectifier efficiency and expanding use of the energy saving Virtual Machine Server to cut carbon emissions by 74,590 tCO2e per annum, reducing GHG emissions by 21 percent compared to the year prior.
- Installed solar panels at 2,747 base stations, 12 of which were micro-converter equipped solar panels that able to produce energy even when sunlight is obscured and joined in research into the panels with the National Electronics and Computer Technology Center (NECTEC).
- Reduced paper usage by persuading 6.7 million billing accounts to switch from mailed bills to E-Bills.



- ▼ **74,590** tCO2e
Network energy efficiency programs
- ▼ **3,503** tCO2e
Renewable energy projects from solar power
- ▼ **1,865** tCO2e
Reduce paper uses from e-bill and e-receipt services



E-bill subscriptions
(million billing accounts)

Challenges & Opportunities ^(GRI 103-1)

The issue of climate change has only grown in importance and urgency at both the national and global levels in recent times. International, state, private and consumer organizations have all supported cooperation and pushed forward measures to reduce greenhouse gas emissions (GHG emissions) in line with the Paris Agreement at 2015 United Nations Climate Change Conference (COP21) limiting the average global temperature increase to no more than 2 degrees Celsius above pre-industrial level. All signatory nations of the agreement, including Thailand, have proposed a revamp to its Nationally Determined Contribution (NDC) rate seeking significant GHG emission reduction. Also, the Global System for Mobile Communications Association (GSMA) set a Net-Zero GHG Emissions target for achievement within 2050. All of this has taken place as the United Nations' Intergovernmental Panel on Climate Change (IPCC) issued a warning over the possible impact of natural disasters that would be set off by the global average temperature rising just another 1.5 degrees Celsius. Climate change is the result of GHG emissions from both the private and public sectors with industries and logistics playing a major role due to their overall dependence on fossil fuels for production, transport and service. While AIS is not part of any GHG emitting industry, its service provision still utilizes electricity produced using fossil fuels including natural gas and coal and it is limited by clean alternative energy options in Thailand.

Being a digital life service provider, AIS is aware of the challenges and opportunities to its business from the aforementioned issues. Apart from policy and legal challenges, AIS must also consider the risks from natural occurrences that are only growing more severe are more difficult to predict, as they pose a threat to its network and its users, especially during this age of digital technology in which communication is a major necessity for economic growth and social normality. AIS has begun expanding its expertise in order to develop ICT services with reduced GHG emissions as well as a system for analyzing and alerting against natural disasters to mitigate impacts that may stem from climate change towards its customers, operators and society in general. Determined to reduce energy consumption, which is a major cause of GHG emissions, and to prepare accordingly to handle climate change, AIS sees positives for its capital structure and reduce risk to its business in the long term.

Management Approach ^(GRI 103-2)

As a digital life service provider, AIS is acutely aware of its responsibility to society to use its capabilities and innovations to aid in remedying the issue of climate change. AIS has committed itself to reducing greenhouse gases, continually improving its energy efficiency and supporting renewable energy both in its operations and products and encouraging its operators, trade partners and equipment manufacturers to play a part in its sustainable business goals. Towards these commitments, AIS has set short, medium and long term goals for reducing greenhouse gas emissions with the

head of its technology executives tasked with carrying out the effort and implementing environmental management across the organization, from its core business to its auxiliary endeavors. A team of environmental experts provides a quarterly report to the Chief Technology Officer (CTO) to inform actions such as setting indexes for performance. The chief also monitors regulations, measures and relevant technological trends to constantly improve the environmental management plan. A report on environmental efforts is presented to Sustainability Development Committee and Board of Directors at least once a year.

AIS maintains an environmental policy approved by its Board of Directors with the objective to support environmental sustainability.

- Evaluate, control, manage and track results for the purpose of reducing overall impacts on the environment.
- Adhere to laws and regulations concerning the environment.
- Take steps to ensure the network and operations are resilient and will remain in service even in times of harsh weather.



Read more on the Environmental Policy at <https://sustainability.ais.co.th/storage/sustainability-priorities/emissions/ais-environmental-policy-en.pdf> or scan the QR code

2020 Progress ^(GRI 103-3)

AIS is committed to its mission to play a role in remedying climate change and maintains core projects on energy efficiency, GHG emission reduction, promoting renewable alternative energy and reducing paper usage. These projects include:

Energy Efficiency

- Expanded use of multi-mode Remote Radio Unit (RRU) covering 2G, 3G and 4G for improved energy savings in comparison to separate equipment, installing 38,392 pieces of such equipment over the course of 2020 to cut GHG emissions by 59,905 tCO₂e per year. Overall, the company has installed 71,063 set of RRU since 2018.
- Improved rectifiers for higher efficiency and reduced power loss, enhancing overall energy efficiency at base stations to indirectly reduce GHG emissions from energy production. Over 6,287 new rectifiers were installed or replaced in 2020, reducing GHG emissions by 2,264 tCO₂e per year.
- Expanded use of a Virtual Machine Server, an operating system enabling use of cloud software via a simulated server, and gradually decommissioned unnecessary server equipment. On top of enhancing resource efficiency and reducing cost, the effort lowered power usage at data centers both for servers and their cooling systems, cutting GHG emissions by 12,421 tCO₂e per year.

Alternative Energy Use In 2020, AIS continued to expand our alternative energy program installing polycrystalline solar panels at 2,747 base stations, 12 of which were special solar panels equipped with micro-converters to compensate for obstructions to sunlight. The company joined with the National Electronics and Computer Technology Center (NECTEC) to study the efficiency of such panels. Also, AIS installed solar panels at additional 2 data centers. From the year 2000, AIS has commenced an alternative energy program based on solar energy in total at 4 data centers and switching centers and 2,809 base stations, generating 6,018 MWh electricity offsetting part of the company's energy demand from grid power and cutting 3,503 tCO₂e in GHG emissions.



Environmental Management System (EMS) Development

The AIS environmental management system received ISO14001:2015 approval. The system uses independent evaluators at two AIS computer data centers and ISO 14001 certified environmental experts at all others. The standard was adopted to enhance environmental management at AIS in areas including energy management, water management and waste management in compliance with relevant regulations and requirements of a sustainable organization.

Paper Usage Reduction AIS integrated digital technology into its internal operations, processes involving partners and in service of customers under the Full-E concept, which encompasses the four services of 1. myAIS, which allows customers to view fees, pay bills, register and monitor packages by themselves, 2. Electronic Bills (E-Bill), 3. Electronic Receipts (E-Receipt) and 4. Electronic Payment (E-Payment). On top of reducing paper usage and the need for travel, these services enhance operational efficiency and convenience for customers. By end-2020, myAIS usage reached 8.1 million users, or 20 percent of AIS customers, 6.7 million billing accounts switched from mailed bills to E-Bills and 84.6 million E-Receipts, all together cutting the need for sheets of paper, equivalent to 1,865 tCO₂e in GHG emissions a year.

Despite its energy usage increasing due to network expansion and growing demand for data, AIS has still been able to limit its GHG emission intensity relative to the amount of data it supplies, underlining the efficiency of its network's design and utilization. Promoting a higher proportion of renewable energy, AIS in 2020 was able to reduce GHG emissions intensity, a ratio of GHG emissions to data traffic, by 82 percent compared to the base year 2015. At the same time, AIS increased its proportion of renewable energy usage to 0.49 percent of total energy used, compared to 0.08 percent in 2019.

In 2021, AIS plans to continue reducing GHG emissions and increasing the use of renewable solar energy across aforementioned projects while continuing to seek out partners in the production of alternative energy to cut capital and operational costs it would have to shoulder in installing solar panels on its own. New technologies will be applied to service area antenna systems to offset the use of unnecessary remote radio units for further energy savings and GHG emission reduction. While AIS plans to further support 5G technology, the high frequency signal requires more electricity used across a larger number of closely spaced signal stations than 3G and 4G, making it important for the company to acquire energy efficient 5G network equipment to limit GHG emissions as well as infrastructure costs. Nonetheless, AIS will move forward with introducing new technological services in support of economic development and in response to the demands of consumers in the digital era.

AIS set the target in line with its mission to reduce GHG emissions and increase renewable energy use as follows:

- Reduce GHG emission intensity in 2021 by 84% compared to the baseline set in 2015 and by 90% in 2023. GHG emission intensity is calculated by the ratio of direct and indirect GHG emission per Terabit of data traffic (tCO₂e per Terabit).
- Increase renewable energy use to 3% of total energy consumption in 2021 and to 5% in 2023.

Performance table

Subjects	Unit	2017	2018	2019	2020
GHG Emission^(GRI 305)					
Total GHG emissions (Scope 1 and 2)	tCO2e	519,950	525,451	615,407	696,883
- Direct GHG emissions (Scope 1) ^{(GRI 305-1) 1}	tCO2e	11,431	10,687	11,177	11,196
- Indirect GHG emissions (Scope 2) ^{(GRI 305-2) 2}	tCO2e	508,519	514,764	604,230	685,687
GHG Intensity ^{(GRI 305-4) 3}	tCO2e per Terabit	0.041	0.025	0.020	0.015
Energy^(GRI 302)					
Total Energy Consumption	MWh	911,827	919,900	1,082,823	1,220,024
	Terajoule ⁴	3,283	3,311	3,898	4,392
Total non-renewable energy consumption	MWh	911,372	919,320	1,081,960	1,214,006
	Terajoule	3,281	3,309	3,895	4,371
- Direct energy consumption: Fuel and other ⁵	MWh	37,778	35,000	36,706	36,052
	Terajoule	136	126	132	130
- Indirect energy consumption: Electricity ⁶	MWh	873,594	884,320	1,045,254	1,177,954
	Terajoule	3,145	3,183	3,763	4,241
Energy from renewable sources ⁷	MWh	454.73	580.38	862.91	6,017.86
	Terajoule	1.637	2.0894	3.1068	21.6643

Subjects	Unit	2017	2018	2019	2020
% Energy from renewable sources	% to total energy consumption	0.05	0.06	0.08	0.49
Power Usage Effectiveness (PUE) at Data Centers ⁸	Unit	1.88	1.61	1.61	1.56
Total energy consumption in data centers	MWh	49,902	56,611	59,015	70,182
% Energy from renewable sources in data centers	% to total energy consumption in data centers	0.91%	0.93%	0.94%	1.02%
Energy cost	Million baht	3,607	3,759	4,443	4,853
Water^(GRI 303)					
Total Water Use ^(GRI 303-1) (2016 version)	Cubic Meters	151,559	158,542	191,332	226,528
Municipal Water ⁹	Cubic Meters	148,377	154,933	187,900	222,821
- Water Stress Area ¹⁰	Cubic Meters	-	-	-	-
Ground Water ¹¹	Cubic Meters	3,182	3,609	3,432	3,707
- Water Stress Area ¹²	Cubic Meters	3,182	3,609	3,432	3,707

Details of note 1-12 are on page 88-89

Waste Management (GRI 306-2)

Reduce & recycle waste from operations as well as encourage customers to dispose E-waste properly

Target 2023 (GRI 305-5)

- Collect 360,000 units of obsolete mobile and related electronic waste from customers for proper recycling in 2023.
- Reduce non-recyclable E-waste from AIS services and operations from 5% of total waste in 2018% to 3% in 2023.
- To be Thailand's No. 1 telecommunication service brand that is also trusted for its environmental responsibility in terms of electronic waste management, promoting awareness among the Thai people about proper recycling of E-Waste.

Significant Improvements in 2020

AIS remains committed to setting policies for environmentally-friendly business operations and giving importance to being a part of national environmental responsibility, setting short, medium and long term goals until 2023. Important developments included:

- **Properly disposed of 55% of E-Waste** from operations with only 0.01% left as non-recyclable residue.
- **Improved internal office waste management process**, maximized delivery of waste into the recycling process, coordinated with external agencies and promoted internal understanding of the importance of waste separation before disposal, leading to an environmentally-friendly change in behavior.

- **Strengthen the “Thais Say No to E-Waste” project**, in taking E-Waste and delivering it for proper recycling. Emphasis on building a network for the project which already installed 2,400 E-Waste drop points across the country, making E-Waste disposal more convenient consumers. Campaigns and activities were also held to promote public awareness and to lead to a behavioral change for proper E-Waste disposal.

Challenges and Opportunities (GRI 103-1)

Digital technologies including 5G are likely to take on an even larger role in daily life, business operations and industrial development in the coming decade, leading to a hike in the quantity of electronic devices necessary for connection to the digital realm. Information from Transforma Insights indicates that IoT connected devices will grow three-fold over the next 10 years while statistics in the Global E-Waste Monitor of the United Nations University has shown annual growth in E-Waste with the global amount in 2019 reaching 53.6 metric tons, on course to hit 74.7 metric tons in the year 2030. The Asian continent is responsible for a majority of E-Waste, producing 24.9 metric tons per annum, even as only 17.4% of the global total is disposed of properly. The Community Hazardous Waste Situation Report of 2019 compiled by Thailand's Department of Pollution Control revealed Thailand produced over 400,000 tons of E-Waste in the year.

AIS, as a Digital Life Service Provider, is one of Thailand's most major retailers of mobile smart phones and electronic equipment related to telephony and thus plays a part in producing electronic waste. This gives AIS a role in ensuring E-Waste relevant to its business is properly managed, with responsibility towards the environment as well as in adherence to forthcoming legal regulations such as the Draft Waste Electrical and Electronic Equipment Act, which would mandate responsible companies properly dispose of E-Waste generated by their operations. Moreover, such efforts would promote awareness among the Thai people of the company's social and environmental responsibility.

Management Approach (GRI 103-2)

AIS, as Thailand's largest telecommunications service and mobile phone related device retailer, is dedicated to proper management of environmentally hazardous waste resulting from its operations. In particular, AIS is determined to develop processes that reduce waste and increase recycling and maintains an objective of promoting widespread understanding towards the danger of E-Waste and proper E-Waste disposal so that it may enter the recycling process. The framework for waste management at AIS comprises 4 areas:

Green Procurement

AIS combined its environmental awareness into its procurement policy to create an effective mechanism for resource and energy usage that also reduces waste, pollution and greenhouse gases. Internal departments are encouraged to understand the criteria and regulations of the Green Procurement policy.

Operations Waste Management

Encompassing network equipment, office electronics and mobile phones, AIS maintains a committee for amortizing network equipment and resources, which decides when to amortize electronic equipment for the sake of change and that maintains a goal of minimizing the environmental impact of resource deployment in AIS operations. Obsolete equipment is separated for reuse or refurbishment and in the event the two options are no longer applicable, recycling, as to make use of the materials and elements of the equipment. AIS has chosen partners authorized

and capable of receiving and managing used electronic equipment. It auctioned the partnership with criteria requiring an appropriate environmentally-friendly process for waste recycling, maximum recycling of used equipment and proper landfilling of non-recyclable residue, which it aims to reduce to only 3% of all its E-Waste by 2023.

Office Waste Management

Supporting maximum waste separation in AIS offices ahead of waste delivery into the recycling process and promoting awareness among personnel on the importance of waste separation and proper waste separation, seeking environmentally-friendly changes in behavior.

Promoting Proper E-Waste Disposal to Customers and the Public

The "Thais Say No to E-Waste" project provided receptacles for 5 types of electronic waste, 1. Mobile Phones and Tablets 2. Charging Cables 3. Earphones 4. Mobile phone batteries 5. Power Banks, so that the waste could be entered into the proper disposal process. The project also sought to promote awareness towards the dangers of electronic waste and an understanding as to the need for proper disposal and recycling.

2020 Progress (GRI 103-3)

Green Procurement

AIS is dedicated to working with partners while considering factors significant to sustainability and long term relationship management. AIS policies and strategies for procurement aim to maintain the company's competitiveness and operational standards while also devoting importance to economic, environmental and social considerations and good governance throughout the administrative structure of new and existing partners, functioning as a moral clause that agencies that collaborate with AIS must follow.

In 2020, AIS re-evaluated its Green Procurement policy and made environmental qualities a mandatory requirement for bidding and a preferred requirement. Plans were made to set Green Procurement requirements and develop a value chain administration policy, such as in the form of a Sustainable Procurement Management Manual or Spend Analysis.



More information about Green Procurement

<https://sustainability.ais.co.th/en/supply-chain-management>

Operations Waste Management

AIS recognizes network equipment including batteries, generators, base station equipment, cables and others, as operations E-Waste. The company's Waste Stewardship Team oversees management of such equipment using a Life Cycle Perspective. This past year, AIS delivered E-Waste into the recycling process using Department of Industrial Works authorized operators with clear processes and disposal locations. The company's non-recyclable residue proportion this year was 0.01%.

AIS also required that its E-Waste recycling vendor compile operational reports every 30 days so that it could maintain start-to-end point monitoring of the E-Waste management and confirm proper and environmentally-friendly processing.

Office Waste Management

Over the past year, AIS enhanced its waste separation by clearly delineating different types of waste, improving the ease of delivering waste for recycling. Waste receptacles were also improved to better personnel waste disposal at the source.

From operations in 2020, only 548 kilograms of waste was generated, down 32% from 2019. Non-Hazardous Waste made up 45% of the total, mostly comprised of office and operations building refuse, and Hazardous Waste made up 55% of the total, comprised of E-Waste and other types of Hazardous Waste from offices.



Promoting Proper E-Waste Disposal through “Thais Say No to E-waste”

AIS continued “Thais Say No to E-Waste” in 2020, focusing on expanding its network throughout the public and private sectors to strengthen implementation and enhance convenience for E-Waste disposal. The project also focused on promoting awareness towards the physical danger of retaining expired E-Waste in the home or improper disposal, at the same time dispensing knowledge on recycling and proper E-Waste disposal in the hopes of fostering understanding towards the critical environmental issue posed by E-Waste.

- **Expansion of “Thais Say No to E-waste” Cooperation Network**
Building a network of participation across the public and private sectors, AIS promoted a sustainable solution to E-Waste’s impact on the environment, expanding its E-waste drop points to over 2,400 locations nationwide to facilitate the proper disposal of E-Waste.



28 May 2020 AIS joined Central Group to install E-Waste receptacles at 37 Central department stores across the country and The Office @ Central World to invite Thais to separate their E-Waste and engage in proper disposal for the sake of environmental sustainability.



1 June 2020 AIS joined hands with Thailand Post to expand its E-waste drop points to 160 Thailand Post offices nationwide.



1 June 2020 AIS joined Thailand Responsible Business Network alongside nine fellow Stock Exchange of Thailand listed companies, Bangkok Airways, Thai Optical, East Water, Thai Airways, Unison, SC Asset, Bank of Ayudhya and Singha Estate to promote proper disposal of E-Waste and for the practice to be further spread through families and acquaintances, setting up E-waste drop points at each company’s offices.



14 July 2020 AIS joined the “Green Paholyothin” network to encourage 13 organizations along Paholyothin Road to join in the “E-Waste the Battle” electronic waste collection and disposal competition.



25 August 2020 AIS joined hands with the Government Savings Bank to promote awareness and understanding in proper E-Waste disposal.



3 December 2020 AIS joined hands with MBK Plc. and Kid Kid Co. Ltd. to invite Thais to sustainably preserve the environment by separating E-Waste and disposing of it through Thais Say No to E-waste drop points at the four MBK department stores of MBK Center, Paradise Park, Paradise Place and The Nine Center Rama 9.



16 December 2020 AIS and the Ministry of Natural Resources and Environment joined hands in the Thais Say No to E-Waste network to promote awareness and participation in sustainable environmental care. The two main collaborations between AIS and the ministry were 1. Expanding E-waste drop points to Ministry of Natural Resource and Environment provincial offices nationwide to facilitate E-Waste disposal and 2. Cooperation with Village Natural Resource and Environment Protection Volunteers to further promote proper E-Waste collection and disposal.

• **Special Activities for Promoting “Thais Say No to E-waste”**

AIS promotes awareness through various activities such as The Green Paholyothin and condominium challenge, AIS E-Waste Drop for Points campaign and AIS E-Waste Bin and Win spread awareness among the Thai people and enticed them to take part in properly disposing of E-Waste, paving the way for environmentally-friendly behavioral changes among the Thai public.



2 September 2020 AIS worked to promote awareness while collecting E-Waste across the country through the “Thais Say No to E-Waste” project, launching the “AIS E-Waste Drop for Points” campaign to thank customers for joining in its environmental mission. E-Waste separated into the five categories of Mobile Phones and Tablets, Charging Cables, Earphones, Mobile phone batteries and Power Banks disposed of at an AIS Shop brought customers 5 AIS Points per piece.

11 December 2020 “AIS E-Waste Bin and Win” invited AIS and AIS Fibre customers to properly dispose of E-Waste at AIS Shop branches nationwide, offering opportunities at prizes by counting 1 piece of E-Waste as 1 Privilege (1 number/10 privileges/activity).

**Results of “Thais Say No to E-waste”
(1 January – 31 December 2020)**

Electronic Waste Type	Pieces
Used Mobile Phones and Tablets	8,950
Accessories	20,204
Batteries	18,073
Others	67,574
Total	114,801

Performance Table

Subjects	Unit	2017	2018	2019	2020
Waste (GRI-306)					
 Total Waste	Tons	1,308	1,223	803	548
By Type					
 Non-Hazardous Waste	Tons	1,209	728	778	246
 Hazardous Waste	Tons	99	495	25	302
By Disposal Method					
 Landfill	Tons	1,076	665	690	192
 Recycle	Tons	232	558	113	356
 % Recycle	% of Total Waste	18	46	14	65
 Landfill non-recyclable or Residue	% of Total Hazardous Waste	5.00	5.00	4.30	0.01

Remarks

- GHG emissions result from the burning of fuels, vehicles, power generators, coolant leakage and carbon dioxide type fire extinguishers. The increase in direct GHG emissions (Scope 1) in 2019, in part, were a result of increased installations and expansion of the network nationwide as well as adding the GHG emissions of CS Loxinfo, a subsidiary of AIS, to the count for the first time. Emission factor and Global Warming Potential (GWP) values used in the calculation are based on a 100-year time frame indicated in the Fourth Assessment Report (AR4) used by the Inter-Government Panel on Climate Change (IPCC) guidelines, Vol.2. The GHG Inventory Calculation tool is from the Thailand Greenhouse Gas Management Organization (TGO). The consolidation approach used in this report is “operational control”. Gases included in the calculation; whether CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃, or all.
- The increase of GHG Scope 2 in 2020, in part, is a result of increased installations and expansion of the network nationwide. The source of emission factor used in the calculation is referenced from ‘Thailand Grid Mix Electricity LCI Database 2552 (2009)’. Consolidation approach use in this report is “operational control”.^(GRI 306-5)
- GHG Intensity is the ratio of GHG per data traffic generated the whole year. It is specific for telecommunication industry which shows efficiency of the emission by stating how much GHG is emitted for every terabit of generated traffic.^(GRI 305-4)
- 1 MWh = 0.0036 Terajoule
- Direct energy consumption results from fuel for operation vehicles and backup generators. The monthly collected data in liters are derived to obtain energy by a conversion factor provided by Department of Alternative Energy Development and Efficiency (DEDE).
- Indirect energy consumption is from electricity used in the business including network operations. Data is compiled to total MWh of usage through either Metropolitan or Provincial Electricity Authority billing, which is recorded in the system.
- Energy from renewable source is from solar panels installed in a several substations and the solar-rooftops of data centers and call centers. Solar energy from solar-rooftops is actually recorded through the system while energy from substations is calculated from solar capacity of each site using a formula as below:

$$E = A \times r \times H \times PR$$

Where

E = Solar energy produced in one year (KWh)

A = The size of the solar panel (cubic meters) (standardly 8 m³ for every one kilowatt of a polycrystalline silicone solar panel)

r = Solar energy to electricity conversion efficiency of the panel (%) (13% for a polycrystalline silicone solar panel)

r = Average solar radiation energy (KWh per cubic meter for an area in Thailand)

PR = Overall efficiency percentage including in-system energy loss (General PR for solar energy systems is 75%)

For each year, the amount of energy from solar panels utilized by each substation can be calculated from the proportion of active energy usage in that year to the generation deciphered according to the above formula. In some cases, solar panels may have only been recently installed at the substation (thus were not in use throughout the year).

Remarks

8. Power Usage Effectiveness (PUE) is a metric to measure efficiency of data centers. PUE is defined as total energy used in a data center divided by the usage of the IT equipment load that such data center serves.
9. Third-party water is added according to GRI 303-3, 2016 version. For the company, Third-party water refers to Municipal Water - tap water supplied by Water Authorities, either metropolitan or provincial. Total quantity of municipal water usage has been calculated by dividing the total cost of water purchased from both authorities with average water price per m³. The improved data collection resulted in a restatement of Third-party water used in 2019.
10. The 2018 edition of the GRI 303-3 must delineate each water source in terms of the scarcity of water of its location and that location's salinity levels and contamination levels (>1,000 mg. per liter). Third party water obtained by the company was not from a source with scarce water levels and was only freshwater.
11. Ground Water is water found underground in the cracks and spaces in soil, sand and rock. It is pumped up and used where tap water is not available. We have one data center using ground water and measure its usage every month.
12. The 2018 edition of the GRI 303-3 must delineate each water source in terms of the scarcity of water of its location and that location's salinity levels and contamination levels (>1,000 mg. per liter). Groundwater obtained by the company was geologically surveyed to be from sources with no scarcity of water and was freshwater due to being from a subterranean source (Information from <https://www.wri.org/aqueduct> referenced by GRI).
13. Non-hazardous waste is defined as office waste or municipal waste which does not include those listed in the latest announcement of the Pollution Control Department (PCD) and Department of Industrial Works (DIW). Typically, they are general office waste, organic waste and some are recyclable waste. The calculation methodology is to weight quantity of office waste from AIS Tower 1 and Tower 2, which collected by municipal government agency sent to landfill. The estimation average waste quantity per staff generated was multiply with the total number of staffs at the end of the year to obtain the total weight of non-hazardous waste. Another type of non-hazardous waste is "recyclable" which is also undergone weight sampling to find average waste per staff and then the total weight of the waste. This "recyclable" waste will finally go to the recycling disposal process.
14. Hazardous waste in our industry is defined to coincide with international standards and the state's definition (Pollution Control Department, Department of Industrial Works and other relevant regulations). Within the telecommunications industry, most hazardous waste is E-Waste, including network equipment, batteries and cellular phones, a minority is waste from the office including batteries and printer cartridges. The weight of E-Waste is collected for the company's resource management system, which records decommissioned equipment and carries out disposal. Average estimates of recycled versus landfilled (leftover) E-Waste is derived from contractors who carry out authorized disposal.
15. Power Usage Effectiveness (PUE) of data centers, water and waste do not include data from CS Loxinfo Plc.

About this Report (GRI 102-48, GRI 102-49, GRI 102-50, GRI 102-51, GRI 102-52, GRI 102-53, GRI 102-54)

Objectives

AIS compiled this report on sustainable business development to present information on its policies, strategies and operations in the three areas of Economy, Society and Environment with an emphasis on matters pertinent to the business and continued growth of AIS and AIS Group, which observe the 7 strategic focuses for enhancing business sustainability each year.

Scope and Boundary

Information presented in this sustainable business development report encompasses operations between 1st January 2020 and 31st December 2020 using the Global Reporting Initiative (GRI) method of reporting for the 8th year. The company's sustainable business development report for 2020 using the Core GRI Standard and presented operations following the highest criteria of the UN Global Compact (UNGC). Information was divided as follows:

Economy

Covers AIS and AIS Group subsidiary operations including CS Loxinfo Plc. (CSL). However, the economy report of CSL does not cover Number of reported complaints during the year regarding breaches of customer privacy and losses of customer data.

In 2020, CS Loxinfo Plc. (CSL) contributed 0.90% of total revenue. The report scope, excluding CSL, represented 99.10% of total revenue.

Information acquired from directly and indirectly inquiring stakeholders is also used. In-depth information on business practices, management structures, good governance, risk management, internal controls and auditing, rewards and important events in the past year, including operational returns are presented in the Annual Report 2020, which is available at <http://investor.ais.co.th>

Society

Covers AIS and AIS Group subsidiary operations including CS Loxinfo Plc. (CSL)

Environment

Covers AIS and AIS Group subsidiary operations including CS Loxinfo Plc. (CSL). The environment report of CSL covers GHG emissions, Energy consumption, but excludes PUE, Water and Waste.

Validation

- Numerical data related to economic operations apply the same data as published in annual financial statements for 2020, which were audited by an independent external auditor.
- Data regarding environmental performance and employees training was audited and verified according to the GRI Standard by independent auditor SGS (Thailand) Co., Ltd. (Details are on pages 96)

Process for Defining Report Quality

- **Balance:** AIS is committed to presenting balanced information so that readers may extrapolate an accurate assessment of the company's sustainability operations.
- **Comparability:** Information from prior operation is presented to display changes and development in the company.
- **Accuracy:** Information presented in this report is reviewed and verified to ensure accuracy and completeness.
- **Timeliness:** This report is compiled annually so stakeholders may evaluate the sustainability of AIS operations in a predictable timeframe.
- **Clarity:** Information is presented in a clear and accessible manner.
- **Reliability:** An internal accuracy review process is used so readers may be confident that all information is accurate, transparent and verifiable.

Inquiry Channel

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GRI Content Index

GRI Standard	Disclosure	Page and URL	Omissions/ Remark	
General Disclosures				
GRI 102: General Disclosures 2016 (Organizational Profile)	102-1	Name of the organization	91, Covers	-
	102-2	Activities, brands, products, and services	7-9	AIS did not sell any banned products in 2020.
	102-3	Location of headquarters	91, 104	-
	102-4	Location of operations	7-9	-
	102-5	Ownership and legal form	9	-
	102-6	Markets served	8-9	-
	102-7	Scale of the organization	8-9, 44, 55	More information refer to AIS Annual Report 2020, page 17-18, 108-113, 166, 194-195
	102-8	Information on employees and other workers	55	No significant variation in employment numbers and changes during the reporting year. More information refer to AIS Annual Report 2020, page 166
	102-9	Supply Chain	AIS Annual Report 2020	Refer to AIS Annual Report 2020, page 29-60
	102-10	Significant changes to the organization and its supply chain	-	No significant changes (i.e. location, operation, share capital structure, supply chain, etc.) during the reporting year.
	102-11	Precautionary principle or approach	AIS Annual Report 2020	Refer to AIS Annual Report 2020, page 45-57
	102-12	External Initiatives	6, 22-26, 59-62, 67-68, 71-72, 84-86	No significant changes (i.e. location, operation, share capital structure, supply chain, etc.) during the reporting year.
	102-13	Membership or associations	5-6, 9	Refer to https://investor.ais.co.th/public_policy_participation.html
GRI 102: General Disclosures 2016 (Strategy)	102-14	Statement from senior decision-maker	4-6	-
	102-15	Key impacts, risks, and opportunities	AIS Annual Report 2020	Refer to AIS Annual Report 2020, page 52-57
GRI 102: General Disclosures 2016 (Ethics and Integrity)	102-16	Values, principles, standards, and norms of behaviour	-	Refer to https://www.ais.co.th/sustainability/en/ais-business-code-of-ethics-cg.html
	102-17	Mechanisms for advice and concerns about ethics	AIS Annual Report 2020	Refer to AIS Annual Report 2020, page 138-139
GRI 102: General Disclosures 2016 (Governance)	102-18	Governance structure	AIS Annual Report 2020	Refer to AIS Annual Report 2020, page 152
	102-20	Executive-level responsibility for economic, environmental, and social topics	AIS Annual Report 2020	Refer to AIS Annual Report 2020, page 58, 153, 163
	102-21	Consulting stakeholders on economic, environmental, and social topics	11-17	-
	102-30	Effectiveness of risk management processes	AIS Annual Report 2020	Refer to AIS Annual Report 2020, page 46-48
	102-31	Review of economic, environmental, and social topics	AIS Annual Report 2020	Refer to AIS Annual Report 2020, page 46-47
	102-32	Highest governance body's role in sustainability reporting	15	More information refer to AIS Annual Report 2020, page 59, 163
	102-33	Communicating critical concerns	15	-
GRI 102: General Disclosures 2016 (Stakeholder Engagement)	102-40	List of stakeholder groups	15-17	-
	102-41	Collective bargaining agreements	-	Refer to https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-human-capital-development.pdf
	102-42	Identifying and selecting stakeholders	-	Refer to https://sustainability.ais.co.th/storage/sustainability-priorities/social-inclusion/ais-stakeholder-communication-engagement.pdf
	102-43	Approach to stakeholder engagement	15-17	-
	102-44	Key topics and concerns raised	15-17	-
GRI 102: General Disclosures 2016 (Reporting Practice)	102-45	Entities included in the consolidated financial statements	AIS Annual Report 2020	Refer to AIS Annual Report 2020, page 189-262
	102-46	Defining report content and topic Boundaries	10-15	-
	102-47	List of material topics	11-14	-
	102-48	Restatements of information	-	No restatement in 2020
	102-49	Changes in reporting	-	No significant changes in scope and boundary from previous reporting periods.
	102-50	Reporting period	90	-
	102-51	Date of most recent report	90	-
	102-52	Reporting cycle	90	-
	102-53	Contact point for questions regarding the report	91	-
	102-54	Claims of reporting in accordance with the GRI Standards	90	-
	102-55	GRI content index	92-95	-
	102-56	External assurance	96	-

GRI Standard	Disclosure	Page and URL	Omissions/ Remark	SDGs	
Materials Topics					
Economy					
Digital innovation					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	12, 21	-	-
	103-2	The management approach and its components	19, 21-26	-	9
	103-3	Evaluation of the management approach	21, 24-27	-	-
Cyber security & data privacy					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	12, 29	-	-
	103-2	The management approach and its components	19, 28-42	-	16
	103-3	Evaluation of the management approach	31,39-43	-	-
GRI 418: Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	43	-	-
Society					
Human capital development					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	13, 47	-	-
	103-2	The management approach and its components	19, 46-54	-	3, 5, 8, 10
	103-3	Evaluation of the management approach	46, 51-56	-	-
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	55	More information refer to https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-human-capital-development.pdf	8
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	56	-	8
	404-2	Programs for upgrading employee skills and transition assistance programs	49, 51-52	-	8
	404-3	Percentage of employees receiving regular performance and career development reviews	55	-	5, 8, 10
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	55	More information refer to https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-human-capital-development.pdf	5, 8, 10
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	50	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable". However, AIS has disclosed more information for this requirement through https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-occupational-health.pdf	3
	403-2	Hazard identification, risk assessment, and incident investigation	-	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable".	-
	403-3	Occupational health services	50	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable". However, AIS has disclosed more information for this requirement through https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-occupational-health.pdf	3
	403-4	Worker participation, consultation, and communication on occupational health and safety	50	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable". However, AIS has disclosed more information for this requirement through https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-occupational-health.pdf	3
	403-5	Worker training on occupational health and safety	50	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable". However, AIS has disclosed more information for this requirement through https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-occupational-health.pdf	3
	403-6	Promotion of worker health	50	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable". However, AIS has disclosed more information for this requirement through https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-occupational-health.pdf	3

GRI Standard	Disclosure	Page and URL	Omissions/ Remark	SDGs	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	-	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable".	-
	403-8	Workers covered by an occupational health and safety management system	-	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable". However, AIS has disclosed more information for this requirement through https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-occupational-health.pdf	3
	403-9	Work-related injuries	55	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable". However, AIS has disclosed more information for this requirement through https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-occupational-health.pdf	3
	403-10	Work-related ill health	55	AIS does not consider Occupational Health and Safety topic as material issue, therefore it's "Not Applicable". However, AIS has disclosed more information for this requirement through https://sustainability.ais.co.th/storage/sustainability-priorities/human-capital-development/ais-occupational-health.pdf	3
Social inclusion					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	13, 58	-	-
	103-2	The management approach and its components	57-68	-	1, 3, 4
	103-3	Evaluation of the management approach	44, 57, 59-69	More information refer to https://sustainability.ais.co.th/th/sustainability-priorities/social-inclusion	-
GRI 201: Economic Performance	201-1	Direct economic value generated and distributed	44	-	-
Cyber wellness & Online safety					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	13, 70	-	-
	103-2	The management approach and its components	70-73	-	16
	103-3	Evaluation of the management approach	70-74	-	-
Environment					
Emission					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	14, 77	-	-
	103-2	The management approach and its components	76-79	-	13
	103-3	Evaluation of the management approach	76, 78-80	-	-
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	80	-	13
	305-2	Energy indirect (Scope 2) GHG emissions	80	-	13
	305-4	GHG emissions intensity	80	-	13
	305-5	Reduction of GHG emissions	76, 78	-	13
GRI 302: Energy 2016	302-1	Energy consumption within the organization	80	-	13
GRI 303: Water 2018	303-1	Interactions with water as a shared resource	-	AIS does not consider Water topic as material issue, therefore it's "Not Applicable".	-
	303-2	Management of water discharge-related impacts	-	AIS does not consider Water topic as material issue, therefore it's "Not Applicable".	-
	303-3	Water withdrawal by source	80	AIS does not consider Water topic as material issue, therefore it's "Not Applicable". However, AIS has disclosed some information for this requirement on page 82	-
E-waste					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	14, 82	-	-
	103-2	The management approach and its components	81-86	-	12, 13
	103-3	Evaluation of the management approach	83-87	-	-
GRI 306: Effluents and Waste 2016	306-2	Waste by type and disposal method	87	For non-hazardous waste, AIS sorted and disposed waste to local contractors and municipality in accordance to law. For hazardous waste transportation and disposal, AIS sourced contractors who hold license as required by law.	12, 13

UNGC Requirement		2020 Disclosure Reference
Principle	Criteria of UNGC COP for the advance level	Page and URL
Strategy, Governance and Engagement		
Scope : Implementing the Ten Principles into Strategies & Operations	1. Mainstreaming into corporate functions and business units	AIS Annual Report 2020, page 58
	2. Value chain implementation	AIS Annual Report 2020, page 58-62
Human Rights		
Principle 1 : Support and respect the protection of internationally proclaimed human rights Principle 2 : Not complicit in human rights abuses	3. Robust commitments, strategies or policies in the area of human rights	https://sustainability.ais.co.th/en/respect-to-human-rights
	4. Effective management systems to integrate the human rights principles	https://sustainability.ais.co.th/en/respect-to-human-rights
	5. Effective monitoring and evaluation mechanisms of human rights integration	https://sustainability.ais.co.th/en/respect-to-human-rights
Labour		
Principle 3 : Uphold the freedom of association and the effective recognition of the right to collective bargaining Principle 4 : Uphold the elimination of all forms of forced and compulsory labour Principle 5 : Uphold the effective abolition of child labour Principle 6 : Uphold the elimination of discrimination in respect of employment and occupation	6. Robust commitments, strategies or policies in the area of labor	AIS Sustainability Report 2020, page 49-53
	7. Effective management systems to integrate the labor principles	AIS Sustainability Report 2020, page 48-53
	8. Effective monitoring and evaluation mechanisms of labor principles integration	AIS Sustainability Report 2020, page 53-58
Environment		
Principle 7 : Support a precautionary approach to environmental challenges Principle 8 : Undertake initiatives to promote greater environmental responsibility Principle 9 : Encourage the development and diffusion of environmentally friendly technologies	9. Robust commitments, strategies or policies in the area of environmental stewardship	AIS Sustainability Report 2020, page 78-81, 83-88
	10. Effective management systems to integrate the environmental principles	AIS Sustainability Report 2020, page 79, 84
	11. Effective monitoring and evaluation mechanisms for environmental stewardship	AIS Sustainability Report 2020, page 82,89
Anti-Corruption		
Principle 10 : Work against corruption in all its forms, including extortion and bribery	12. Robust commitments, strategies or policies in the area of anti-corruption	AIS Annual Report 2020, page 129-141
	13. Effective management systems to integrate the anti-corruption principle	AIS Annual Report 2020, page 129-141
	14. Effective monitoring and evaluation mechanisms for the integration of anti-corruption	AIS Annual Report 2020, page 129-141
Un Goals and Issues		
Scope : Taking Action in Support of Broader UN Goals and Issues	15. Core business contributions to UN goals and issues	AIS Sustainability Report 2020, page 13-15
	16. Strategic social investments and philanthropy	AIS Sustainability Report 2020, page 59-61
	17. Advocacy and public policy engagement	AIS Sustainability Report 2020, page 4-6
	18. Partnerships and collective action	AIS Sustainability Report 2020, page 14, 61-70
Governance		
Scope : Corporate Sustainability Governance and Leadership	19. CEO commitment and leadership	AIS Sustainability Report 2020, page 4-6
	20. Board adoption and oversight	AIS Annual Report 2020, page 58, 162
	21. Stakeholder engagement	AIS Sustainability Report 2020, page 16-19

Assurance Statement



ASSURANCE STATEMENT

SGS (THAILAND) LIMITED'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE ADVANCED INFO SERVICE PUBLIC COMPANY LIMITED'S SUSTAINABILITY REPORT FOR 2020

NATURE AND SCOPE OF THE ASSURANCE/VERIFICATION

SGS (Thailand) Limited was commissioned by Advanced Info Service Public Company Limited (hereinafter referred to as AIS) to conduct an independent assurance of the Sustainability Report year 2020 in the section of Environmental and Human Capital Management (hereinafter referred to as Sustainability Report). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the sampled text, and data in accompanying tables, contained in this report.

The information in the Sustainability Report of AIS and its presentation are the responsibility of the directors or governing body and the management of AIS. SGS (Thailand) Limited has not been involved in the preparation of any of the material included in the Sustainability Report.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all AIS's stakeholders.

The SGS protocols are based upon internationally recognized guidance, including the Principles contained within the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines (2016 and 2018) for accuracy and reliability and the guidance on levels of assurance contained within the AA1000 series of standards and guidance for Assurance Providers.

This report has been assured at a moderate level (assessment of processes and data is performed to reduce the risk of error in the final conclusions of the assurance at a limited level) of scrutiny using our protocols for:

- Evaluation of content veracity;
- AA1000 Assurance Standard (v3) moderate evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2018) and;
- Evaluation of the report against the Global Reporting Initiative (GRI) Sustainability Reporting Standards (2016 and 2018).

The assurance comprised a combination of pre-assurance research, interviews with relevant employees and the person in charge of producing the report. Documentation and record review and validation with external bodies and/or stakeholders where relevant were carried out remotely by connecting via the internet to prevent the spread of COVID-19 infections. Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

STATEMENT OF INDEPENDENCE AND COMPETENCE

The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS (Thailand) Limited affirm our independence from AIS, being free from bias and conflicts of interest with the organization, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors experienced in one or more of the following standards: AA1000, GRI, QMS, EMS, SMS, EnMS, Carbon Footprint, Water Footprint, GHG Validation - GHG Verification, Lead auditors and experience on the SRA Assurance service provisions.

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VERIFICATION/ ASSURANCE OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within Sustainability Report verified is accurate, reliable and provides a fair and balanced representation of AIS sustainability activities from 1st January 2020 to 31st December 2020.

The assurance team is on the opinion that the Report can be used by the Reporting Organization's Stakeholders. We believe that the organization has chosen an appropriate level of assurance for this stage in their reporting. In our opinion, the content and reported data of the report meet the requirement of GRI (2016 and 2018) in accordance with Core option and AA1000 Assurance Standard (v3), moderate level assurance.

AA1000 ACCOUNTABILITY PRINCIPLES (2018) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

Inclusivity

AIS has demonstrated a good commitment to stakeholder inclusivity and stakeholder engagement in various ways in the respective divisions and sites. The communication with stakeholders is continuously implemented in the divisions and sites including the headquarters. AIS assess the relevance of the mission the business activities to issues from stakeholders, practices sustainability management by reflecting the results in the business strategy.

Materiality

AIS considered the outcomes of communications with internal and external stakeholders, social trends, the United Nations Sustainable Development Goals (SDGs). Issues that are material to each group and the report addresses these at an appropriate level to reflect their importance and priority to stakeholders. Targets to be achieved in the responsible divisions where possible has been set. It is recommended to continuously enhance stakeholders' understanding impacts of AIS.

Responsiveness

AIS addresses the identified issues in the relevant divisions through the business activities. Stakeholders have been communicated in various ways to report the progress of correspondence to the issues and gathered information.

Impact

Performance results related to key issues are reported in the report. Sustainability performances identified to be scope of assurance for ratio of training hours, amount of energy consume by AIS, volume of water withdrawal, amount of waste disposal method, amount of GHG emissions have been disclosed changes in data over time. For further reporting, AIS should disclose target value and assess the impact of AIS' performance on environment and society.

GLOBAL REPORTING INITIATIVE REPORTING GUIDELINES CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

AIS's Sustainability Report year 2020 is prepared in accordance with the core option for GRI Standard (2016 and 2018) and fulfills all the required content and quality criteria for the identified aspects listed as below;

- GRI 302 – Energy 2016; (302-1 - Energy consumption within the organization)
- GRI 303 – Water 2018; (303-3 – Water withdrawal)
- GRI 305 – Emissions 2016; (305-1 - Direct (Scope 1) GHG emissions and 305-2 - Energy indirect (Scope 2) GHG emissions)
- GRI 306 – Effluents and Waste 2016; (306-2 - Waste by type and disposal method)
- GRI 404 – Training and Education 2016; (404-1 - Average hours of training per year per employee)

The material aspects and their boundaries within and outside of the organization are properly defined in accordance with GRI's Reporting Principles for Defining Report Content. Disclosures of identified material aspects, boundaries are correctly located in context report. For future reporting, it is recommended to have more descriptions of AIS and subsidiaries' involvement with impact for each key issues and how efforts were given to mitigate the impacts. The mechanism for internal audit on the data gathering process should be established to maintain the system in place.

Signed:

For and on behalf of SGS (Thailand) Limited



Amnat Pisutsin, General Manager
Bangkok THAILAND
22nd February 2021
www.SGS.com



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Licensed Assurance Provider
000-8

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