

2024 ICAO REGIONAL SEMINAR ON ENVIRONMENT

In collaboration with



APAC Region

7 to 8, August 2024

Bangkok, Thailand



ICAO

ENVIRONMENT



MS NGUYỄN PHƯỚC THẮNG

**DIRECTOR OF SCIENCE, TECHNOLOGY AND ENVIRONMENT DEPARTMENT
CIVIL AVIATION AUTHORITY OF VIETNAM (CAAV)**



**DIGITAL TRANSFORMATION
IN VIETNAMESE CIVIL AVIATION INDUSTRY
IN ASSOCIATED WITH THE USE OF SAF
OPPORTUNITIES, CHALLENGES AND SOLUTIONS**



2024 ICAO REGIONAL
SEMINAR ON
ENVIRONMENT

In collaboration with **CAAT**
Civil Aviation Authority of Thailand

APAC Region

7 to 8, August 2024
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THE IMPLEMENTATION
COMMITMENT OF THE
MOST LEADERS OF VIETNAM

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**DIGITAL TRANSFORMATION
IN VIETNAMESE CIVIL AVIATION INDUSTRY
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ENERGY - DEVELOPMENT - SUSTAINABILITY

51 - 0 - 5



**DIGITAL TRANSFORMATION
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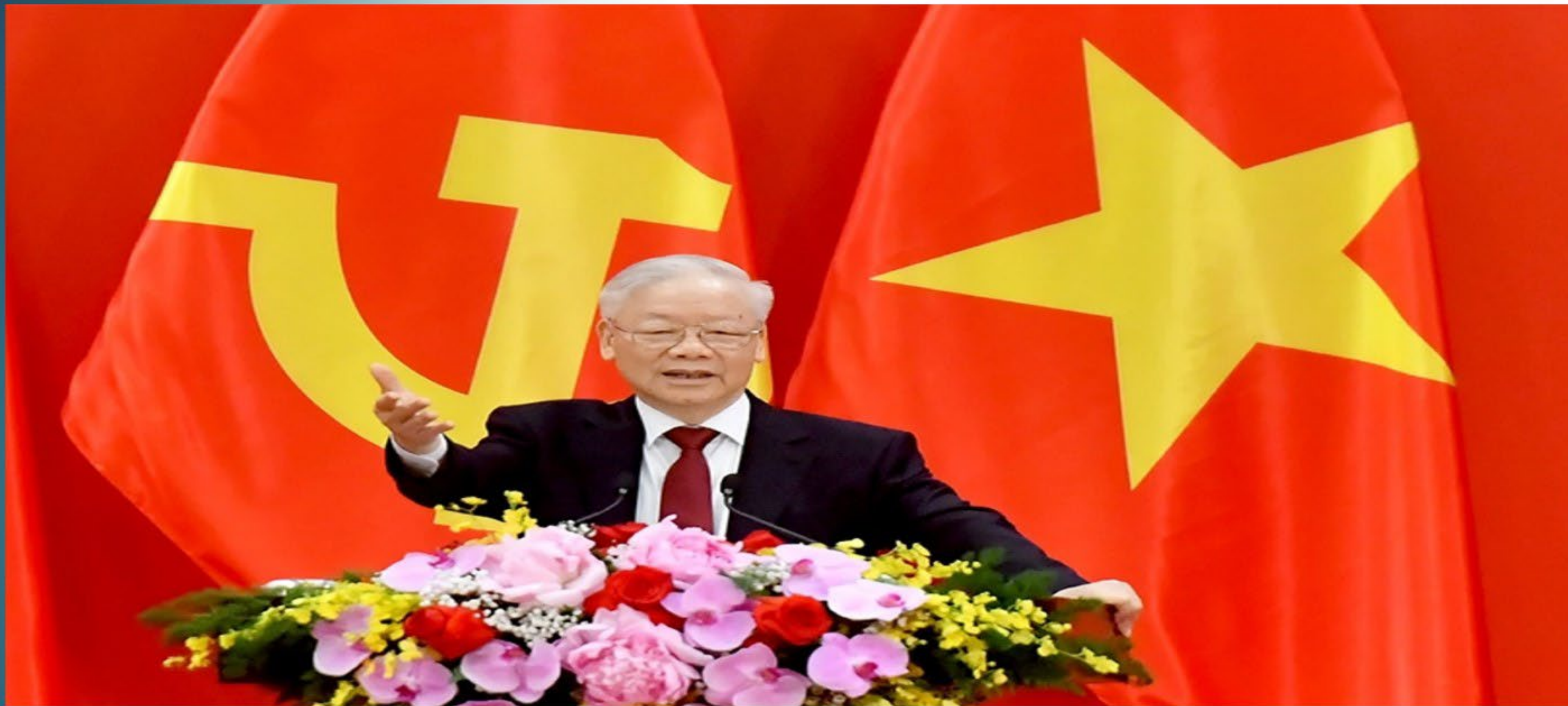
CHAPTER 1

THE IMPLEMENTATION COMMITMENT OF THE LEADERS OF VIETNAM



**DIGITAL TRANSFORMATION
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**Digital transformation is the driving force
to build a strong and prosperous Vietnam**

**NET ZERO EMISSIONS
BY 2050**



**DIGITAL TRANSFORMATION
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2019 2020

GIÁM SÁT, BẢO
CẢO & THẨM
ĐỊNH ĐỂ XÁC
ĐỊNH
ĐƯỜNG CƠ SỞ

GĐ THỬ NGHIỆM

2021 2021 2023

GIAI ĐOẠN 1

2024 2025 2026

GIAI ĐOẠN 2

2027 2028 2029 2030 2031 2032 2033 2034 2035

TỰ NGUYỆN

*Các quốc gia tự nguyện sẽ tham gia chương trình từ năm 2021
(Khuyến khích các quốc gia tự nguyện)*

Nhà khai thác bay các đường bay giữa các quốc gia tự nguyện sẽ tính bù đắp phát thải trên cơ sở trung bình tăng trưởng ngành

BẮT BUỘC

*Miễn trừ cho: Đảo nhỏ, các nước chậm phát triển, các quốc gia giữa đất liền và các nước có vận tải hàng không nhỏ hơn 0,5%
(Các quốc gia này có thể tham gia tự nguyện)*

Nhà khai thác sẽ tính bù đắp phát thải trên cơ sở tăng trưởng bình trung bình ngành

Trách nhiệm bù đắp phát thải chuyển đổi tới trên 20% tăng trưởng của Nhà khai thác

Trách nhiệm bù đắp phát thải chuyển đổi tới trên 70% tăng trưởng của Nhà khai thác

CO₂ TĂNG SAU NĂM 2020 SẼ ĐƯỢC BÙ ĐẮP



2019 2020

MONITORING,
REPORTING
& VERIFICATION
TO SET THE
BASELINE

1 JANUARY

2026

VOLUNTARY

*States are volunteering to be part of the scheme from 2021
(more States are encouraged to volunteer).*

Operators flying routes between volunteering States will offset emissions based on the average CO₂ growth of the aviation sector.

SECOND PHASE

2027 2028 2029 2030 2031 2032 2033 2034 2035

MANDATORY

With exemptions for: Small Islands, Least Developed Countries, Land-locked Developing Countries and States which have less than 0.5% of air traffic (although they can still volunteer).

Operators will offset based on average CO₂ growth of the sector.

Offset obligations shift to include over 20% of individual operator growth.

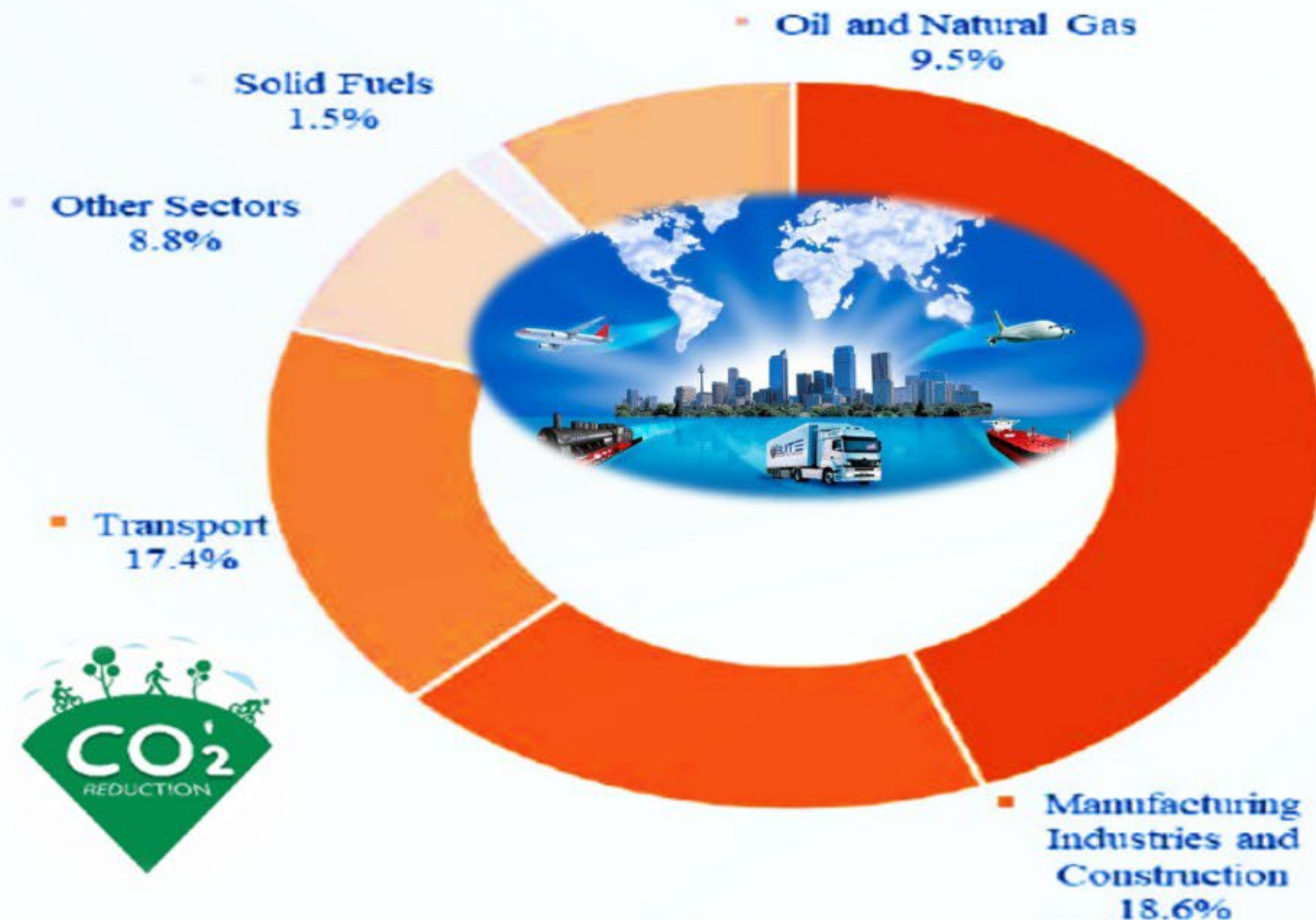
Offset obligations shift to be over 70% based on individual operator growth.

OVER 80% OF THE GROWTH IN AIR TRAFFIC CO₂ AFTER 2020 WILL BE OFFSET



**DIGITAL TRANSFORMATION
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Energy Industries
44.2%



Manufacturing
Industries and
Construction
18.6%



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VIETNAM AIRLINES GOALS TO BECOME DIGITAL AIRLINE IN 2025



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Tàu bay xác định vị trí của mình thông qua hệ thống vệ tinh định vị toàn cầu GNSS

Sau khi nhận tín hiệu định vị từ vệ tinh, tàu bay đồng thời phát quảng bá dữ liệu định vị này và các dữ liệu khác đến các tàu bay khác và trạm mặt đất được trang bị ADS-B

Các trạm mặt đất sau đó về tàu bay đến kiểm

CO₂ REDUCTION

YOU ARE CLEAR TO DO WHATEVER...

© MONTE WOLVERTON

caglecartoons.com

Satellites equipped with ADS-B receiver 1090 ES

ADS-B report

ANSP ADS-B infrastructure

ADS-B

Automatic Dependent Surveillance - Broadcast

AA 220 X, Y, Z

Mode A/CIS Interrogation

Mode A/CIS Reply, ADS-B, IFF

TDOA Processing

Hyperbolic Positioning

Aircraft Position Display

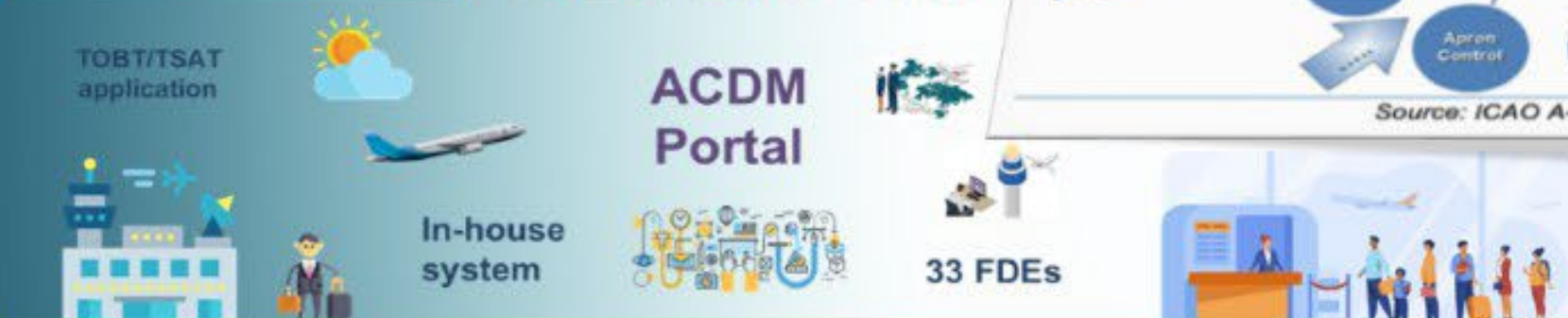


DIGITAL TRANSFORMATION IN VIETNAMESE CIVIL AVIATION INDUSTRY IN ASSOCIATED WITH THE USE OF SAF OPPORTUNITIES, CHALLENGES AND SOLUTIONS





Phase 1 TOBT/TSAT Trial



Phase 2 Full A-CDM – ATFM Integration



ST	CLDT	ALDT	UNRY	SMT	CRDT	ARRT	APPR	DELT	ACGT	DPKR	NGWR	CTTT	SORT	COBT	TOBT	ADOT	ARRT	ARRT	TSAT
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			



DIGITAL TRANSFORMATION IN VIETNAMESE CIVIL AVIATION INDUSTRY IN ASSOCIATED WITH THE USE OF SAF OPPORTUNITIES, CHALLENGES AND SOLUTIONS





**DIGITAL TRANSFORMATION
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CHAPTER 2

VIETNAM'S SOLUTIONS AND IMPLEMENTATION RELATED TO SAF



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The Prime Minister of Vietnam issued Decision No. 876/QĐ-TTg dated July 22, 2022 approving the action program on green energy conversion, reducing methane and carbon emissions in the transport sector, including the Vietnamese Civil Aviation Industry:

1. By 2030, complete the database system on energy use and fuel consumption of aviation enterprises.
2. From 2035: Use at least 10% sustainable fuel for some short flights; 100% of passenger vehicles and other vehicles in the newly invested airport use electricity and green energy. Depending on technological conditions, the remaining emissions are offset by carbon to achieve net emissions of “0”.



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SGS

according to the
Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
As developed by the International Civil Aviation Organization (ICAO)

Certificate Number: ISCC-CORSIA-Cert-DE100-18719124
SGS Germany GmbH
Europa Allee 12, D-49685 Emstek

certifies that

Tan Son Nhat Petrol Commercial JSC
Airfield Depots, Tan Son Nhat Airport, Ward 2, Tan Binh District
72100 HoChiMinh City
Vietnam

complies with the requirements of CORSIA and the certification system

ISCC CORSIA
(International Sustainability and Carbon Certification)
which is approved by the ICAO Council.

Place of the audit
see above

This certificate is valid from 28. February 2024 to 27. February 2025
The site of the system user is certified as:
trader with storage

Emstek, 28.02.2024
Place and date of issue

SGS Hamburg
SGS Germany GmbH

The issuing Certification Body is responsible for the accuracy of this document.
Version / Date: 1 (no adjustments) / 28.02.2024



Vietnam Airlines
REACH FURTHER



Sustainable aviation fuel
Blended SAF is key to meeting goals

Blended SAF can play a major role in supplying the fledgling sustainable aviation fuel (SAF) industry, which reduces aviation carbon emissions.



Fly Green with Sustainable Aviation Fuel
Bangkok - Da Nang
10th July 2024



-SAF Roadmap



**DIGITAL TRANSFORMATION
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CHAPTER 3

CHALLENGES WHEN DIGITAL TRANSFORMATION IS ASSOCIATED WITH SAF



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aFuel - The World's Largest Digital Fueling Network

The product to turn the digitalized fueling process into reality

After the last article, it should be clear that the digitalization of the fueling process is primed to be achieved by a network business approach. The positive network effects are given and will support the growth and function of the market strongly - if there would only be a solution applying that principle already. Look no further! Let me introduce our product, aFuel - the world's largest digital fueling network - to you! With aFuel we have built the perfect solution for airlines wanting to digitalize the fueling process. The next section of this magazine focuses on everything you need to know about it.

AVAILABILITY

85 airports
26 countries

WORKLOAD

1 million messages a year
An aFuel flight every 5 minutes

INTEGRATIONS

46 connected IPAs
10 integrated systems

EXPANSION

+51 new airports in 2022
250 total airports by 2028



Turnaround Minutes

The breakdown below highlights the potential reduction in overall turnaround time per month generated by aFuel. The percentages indicate the percentage of flights handled via aFuel.

Small airline	Medium airline	Large airline
(2,000 flights/month)	(10,000 flights/month)	(20,000 flights/month)
25% - 13 h/month	25% - 70 h/month	25% - 140 h/month
75% - 40 h/month	75% - 208 h/month	75% - 418 h/month
100% - 53 h/month	100% - 278 h/month	100% - 557 h/month

Delay Minutes

The breakdown below highlights the potential monetary savings per month generated by aFuel by reducing delay minutes. The percentages indicate the percentage of flights handled via aFuel.

Small airline	Medium airline	Large airline
(2,000 flights/month)	(10,000 flights/month)	(20,000 flights/month)
25% - 779 \$/month	25% - 3,823 \$	25% - 7,642 \$/month
75% - 2,338 \$/month	75% - 11,469 \$	75% - 22,926 \$/month
100% - 3,118 \$/month	100% - 15,293 \$	100% - 30,568 \$/month



Fuel Order
The fuel order can be issued by various systems automatically or by the pilot using their EFB tablets. It is also possible to communicate "No Fuel" fuel orders to indicate tankering flights in advance.



Fuel Milestone
The fuel milestones give service providers the chance to update the airline about the fueling progress. Various events can be communicated, like that the truck has arrived under the wing or that the fuel hose has been disconnected.



Fuel Slip
The fuel slip is no longer printed out but handled completely digital. It is digitally transferred from the truck operator to the crew, awaiting confirmation. This eliminates all the manual process steps that required personal interaction.



eSignature
To further enhance the confirmation process of the fuel slip, it is possible to e-sign it. The used procedure aligns with European legislation ensuring equivalence to a hard-written signature.

DIGITAL TRANSFORMATION IN VIETNAMESE CIVIL AVIATION INDUSTRY IN ASSOCIATED WITH THE USE OF SAF OPPORTUNITIES, CHALLENGES AND SOLUTIONS





ICAO

Security and Facilitation Strategic Objective

Aviation Cybersecurity Strategy

October, 2019



Approved by and published under the authority of the Secretary General

INTERNATIONAL CIVIL AVIATION ORGANIZATION



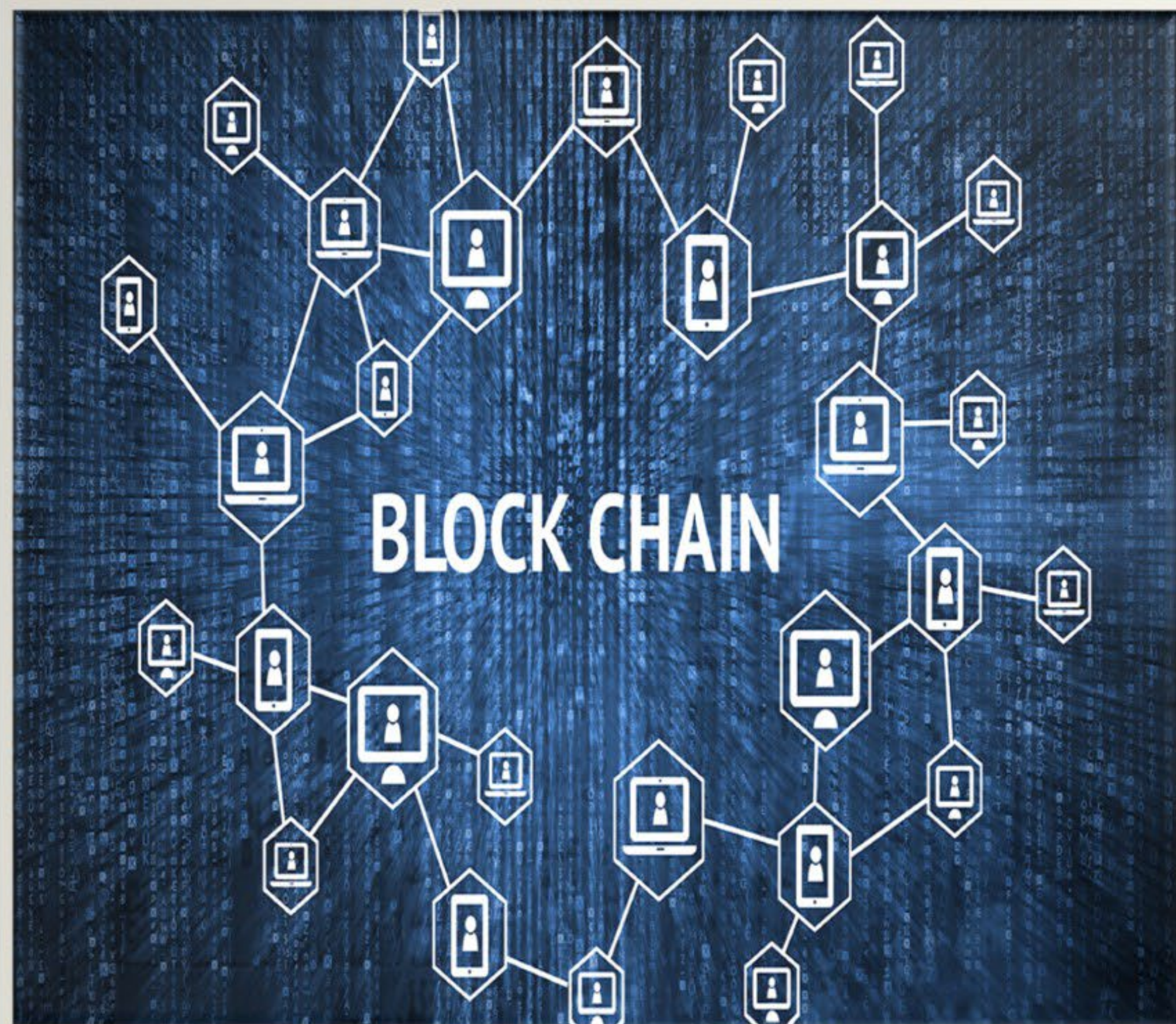
**DIGITAL TRANSFORMATION
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Avélia

A blockchain powered
book-and-claim solution
that provides you
with fully traceable
environmental attributes
of SAF to help decarbonise
your air travel

Powered by



accenture

With support from



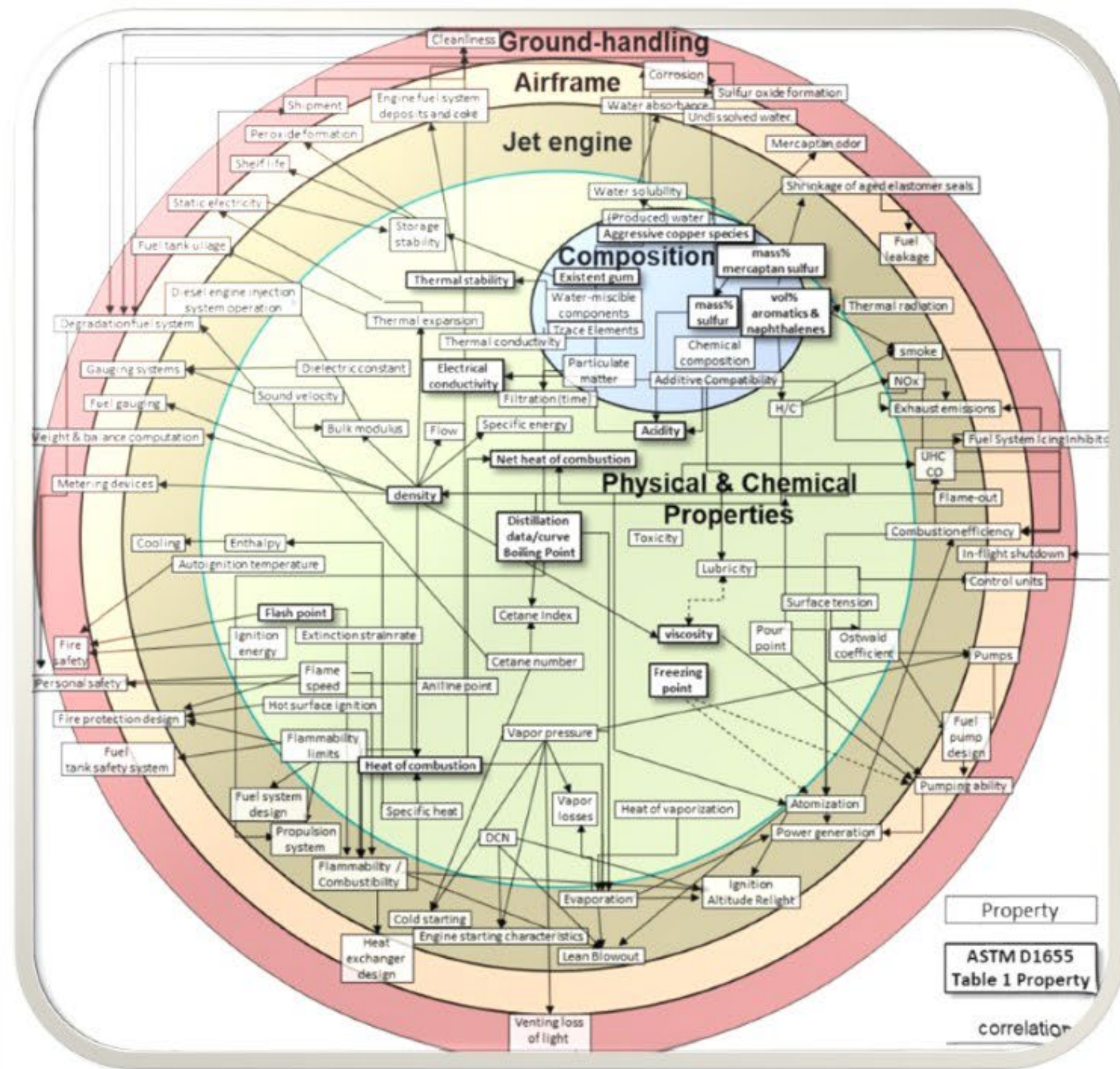
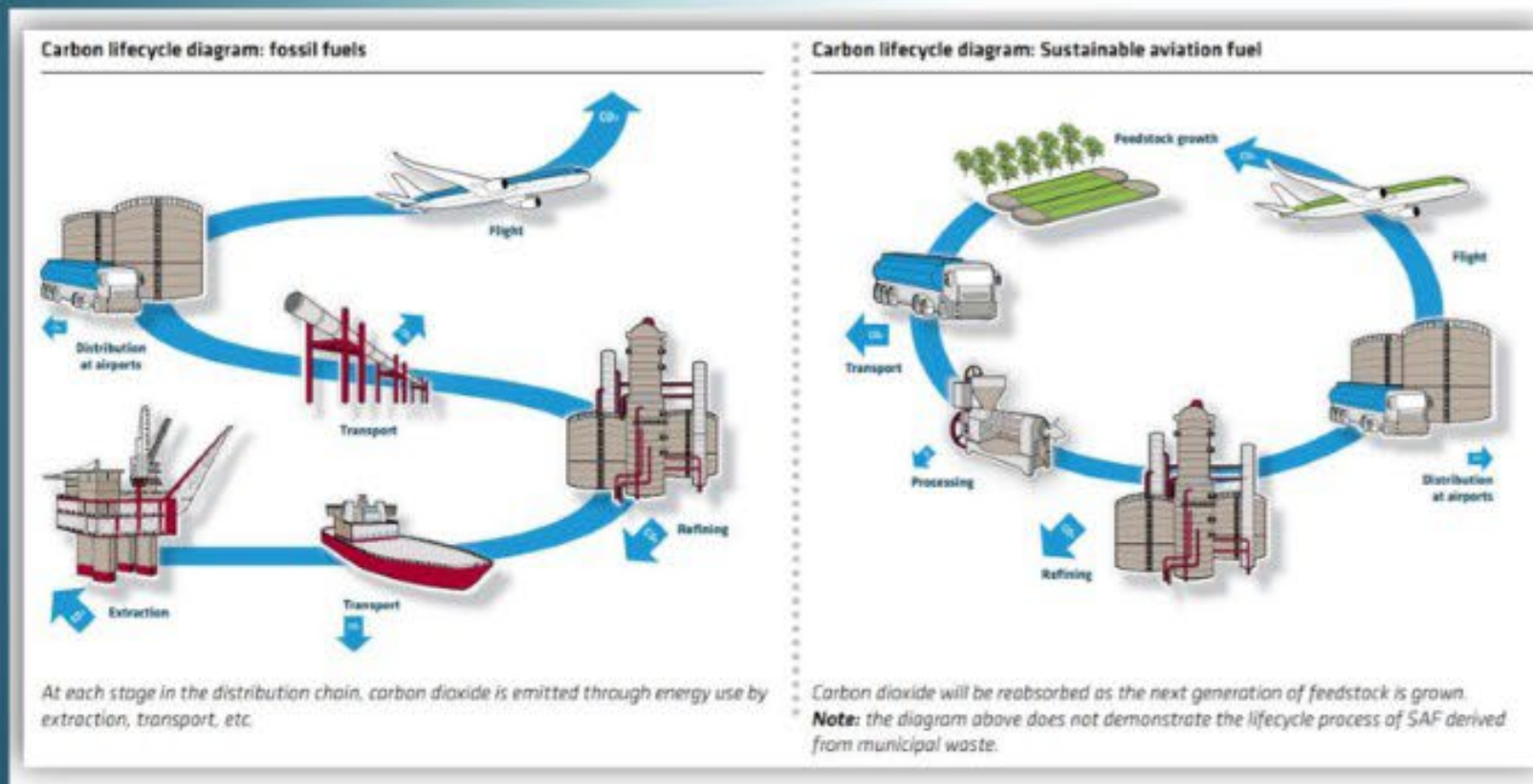
energy web

Together with



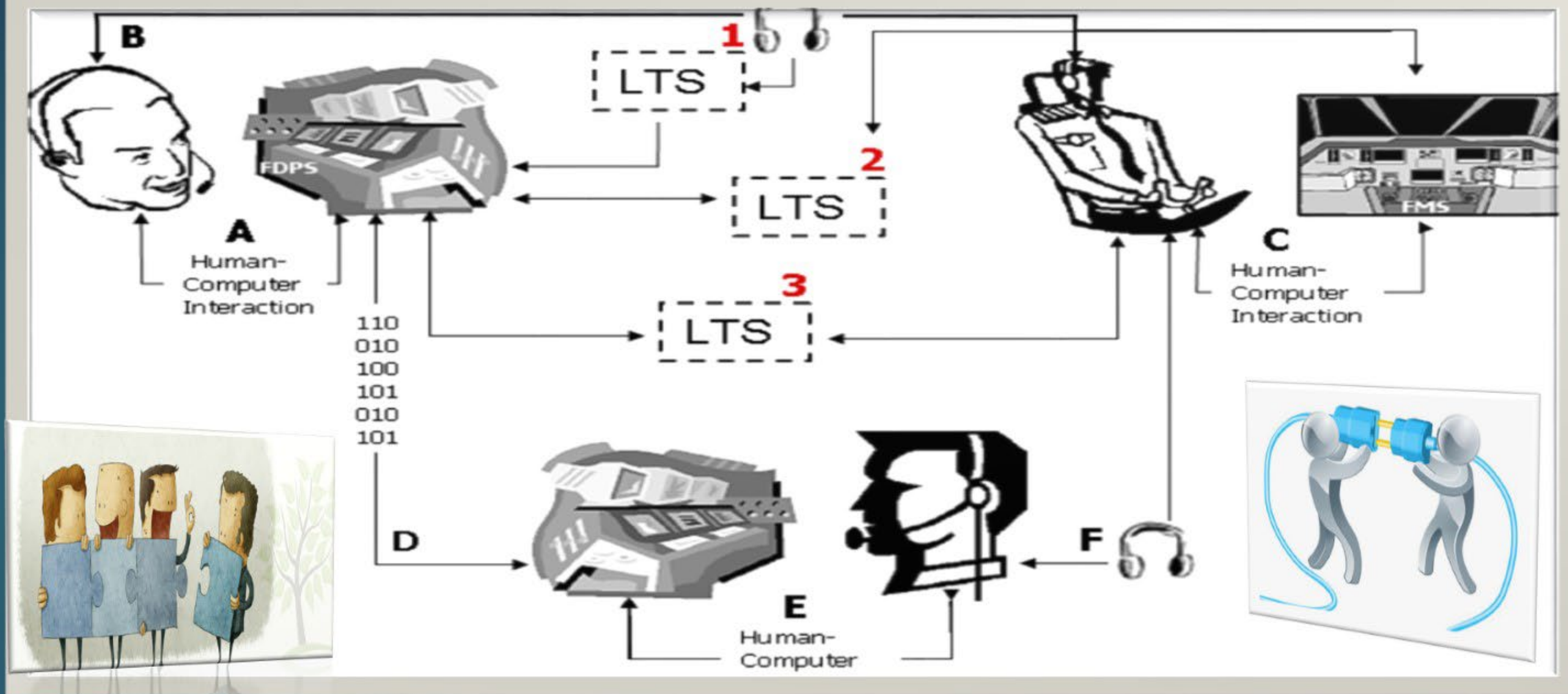
GLOBAL
BUSINESS
TRAVEL





DIGITAL TRANSFORMATION IN VIETNAMESE CIVIL AVIATION INDUSTRY IN ASSOCIATED WITH THE USE OF SAF OPPORTUNITIES, CHALLENGES AND SOLUTIONS





The threat to aviation cybersecurity will be reduced as long as our systems maintain direct human-to-human contact.



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CHAPTER 4

SOLUTIONS, EXPERIENCE, IDEAS OF VIETNAM



**DIGITAL TRANSFORMATION
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Promote, strengthen and raise awareness of Digital Transformation associated with sustainable development of Vietnamese Civil Aviation Industry in the period 2024 - 2030



**DIGITAL TRANSFORMATION
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-SAF Roadmap



**DIGITAL TRANSFORMATION
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RSB
Roundtable on
Sustainable Biomaterials
www.rsb.org

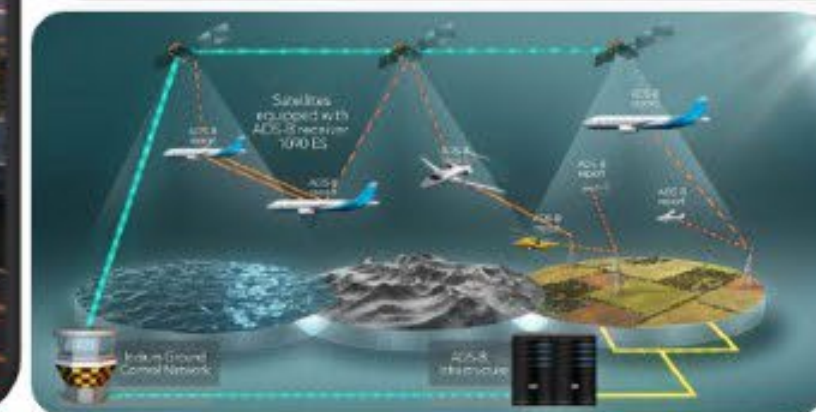


**DIGITAL TRANSFORMATION
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-SAF Roadmap




Develop guidelines and implement strong communications on the role the airport system can play in supporting SAF development



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ICAO

Security and Facilitation Strategic Objective

Aviation Cybersecurity Strategy



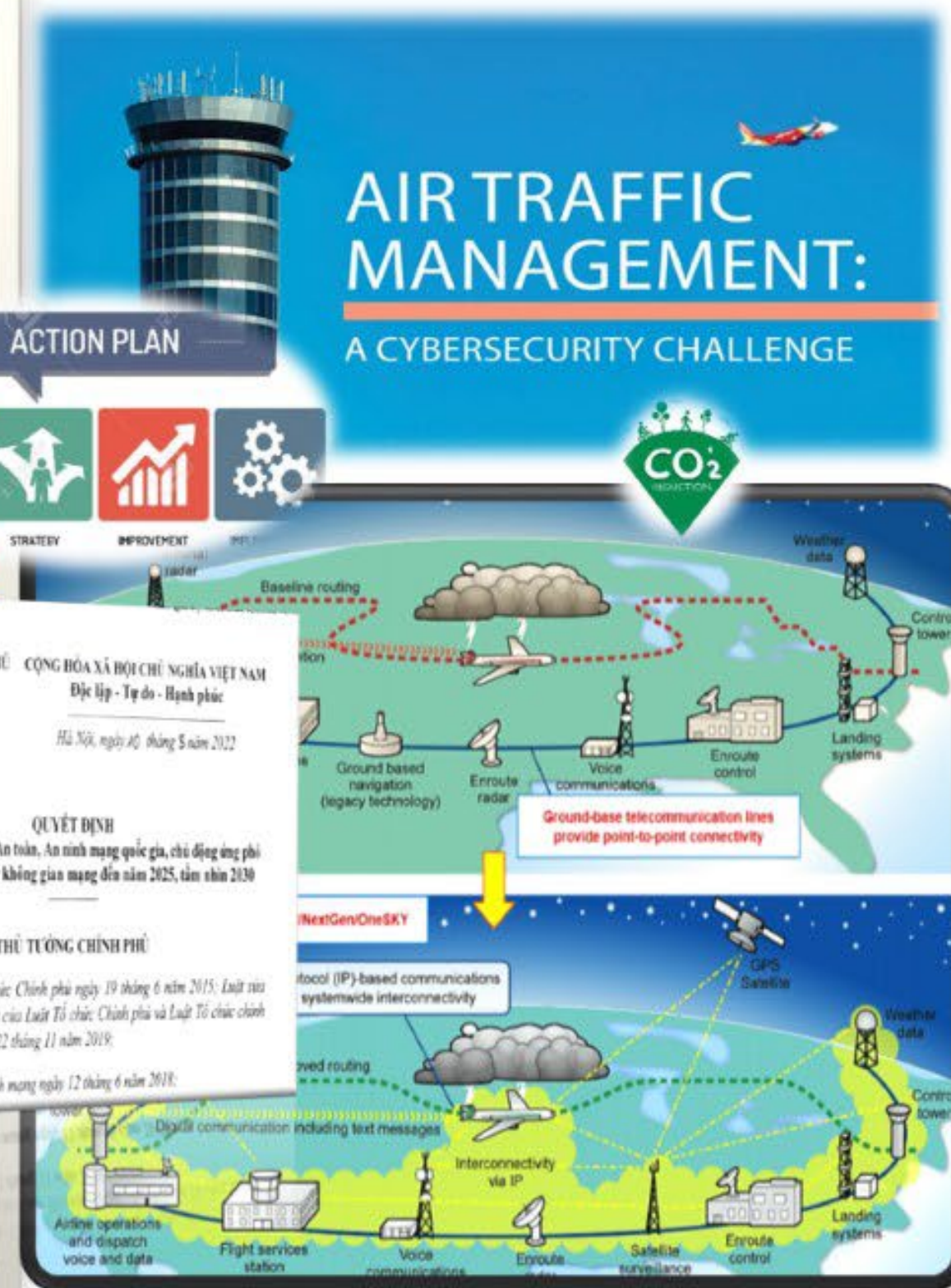
STRATEGY



IMPROVEMENT

Approved by and published under the authority of the Secretary General.

INTERNATIONAL CIVIL AVIATION ORGANIZATION



THỦ TƯỚNG CHÍNH PHỦ CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 864/QĐ-TTg Hà Nội, ngày 10 tháng 5 năm 2022

QUYẾT ĐỊNH

Phê duyệt Chiến lược An toàn, An ninh mạng quốc gia, chủ động ứng phó với các thách thức từ không gian mạng đến năm 2025, tầm nhìn 2030

THỦ TƯỚNG CHÍNH PHỦ

Căn cứ Luật Tổ chức Chính phủ ngày 19 tháng 6 năm 2015; Luật sửa đổi, bổ sung một số điều của Luật Tổ chức Chính phủ và Luật Tổ chức chính quyền địa phương ngày 22 tháng 11 năm 2019;

Căn cứ Luật An ninh mạng ngày 12 tháng 6 năm 2018;



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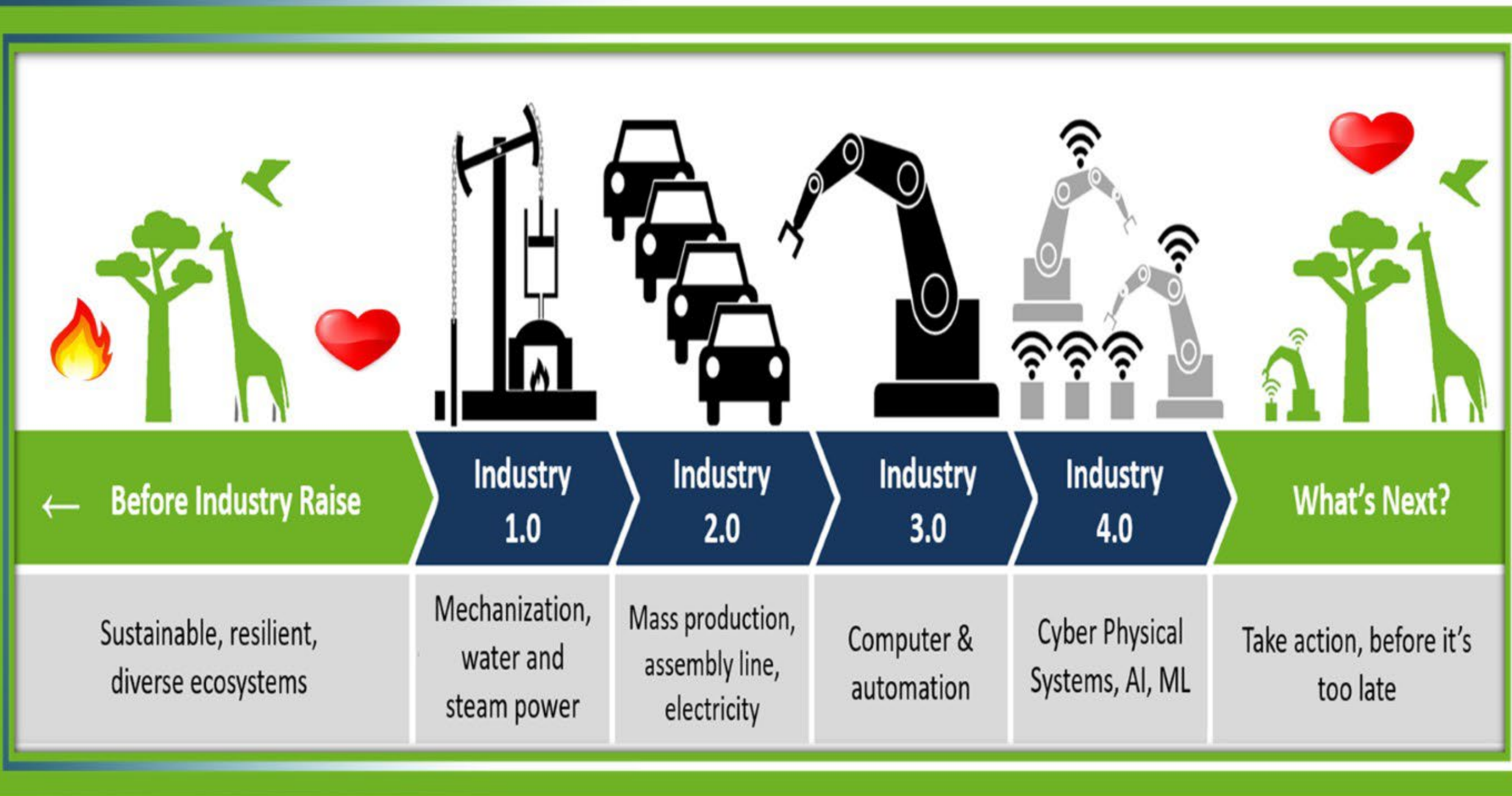


We are great when we do our daily tasks with great love



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**DIGITAL TRANSFORMATION
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Thank You

