THE CONOPS OF COLLABORATIVE MULTI-CONSTRAINT CONVERSION PROGRAM (CMCP+) : ONE CTOT SOLUTION (OCS) ON CONFLICTING ATFM MEASURES

Presented by CHINA

CONTENTS

From “Conflicting” to “Harmonizing” ATFM measures

CONTENTS

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INTRODUCTION

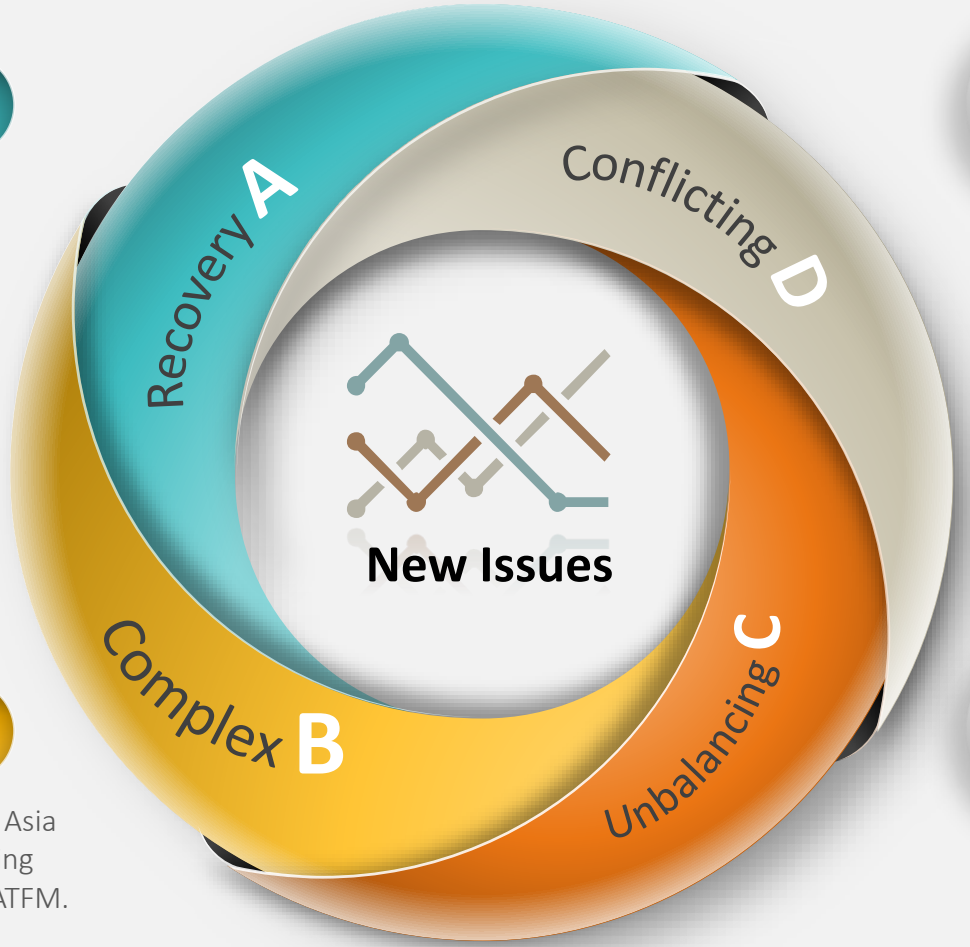
Conflicting ATFM measures

A Recovery

Flight volume will convert from the quick recover to the new high-speed growth.

B Complex

So many States and Administrations in Asia and Pacific, having a complex operating environment and various demands on ATFM.



D Conflicting

Multiple ATFM measures acted on the same traffic flow or the same flight will be taken at the same time.

C Unbalancing

Demand capacity unbalancing will occur simultaneously in multiple areas with the increase of flight volume.

Conflicting ATFM measures

Judging most penalizing regulation (MPR),or choosing an ATFM measure based on coordination, or taking an ATFM measure through regulations

Current solutions

Complex Environments

Existing solutions cannot cope with so many ATFM measures or complex running environments

It is difficult to negotiate an ATFM measure especially when these measures are taken by different ANSPs

Difficulty in coordination

Trapped in choosing

Even though the best ATFM measure needed to be taken is selected, other ATFM measures could not be satisfied when many flights are trapped in choosing the ATFM measure needed to be taken

Conflicting ATFM measures

Selectively executing

Selectively executing part of conflicting ATFM measures will sharply decrease the efficiency of ATFM measures which are not selected, and this problem likely gets stuck in an infinite loop in complex situation, leading to the breakdown of the entire ATFM system.

One CTOT Solution- CMCP

The restrictions will all be met by one or a series of methods to realize ATFM measures.

CONTENTS

From “Conflicting” to “Harmonizing” ATFM measures

DISCUSSION

From “Conflicting” to “Harmonizing” ATFM measures

Conflicting ATFM measures

One CTOT Solution (OCS)

Upgrading Collaborative MIT Conversion Program (CMCP) to Collaborative Multi-constraint Conversion Program (CMCP+)

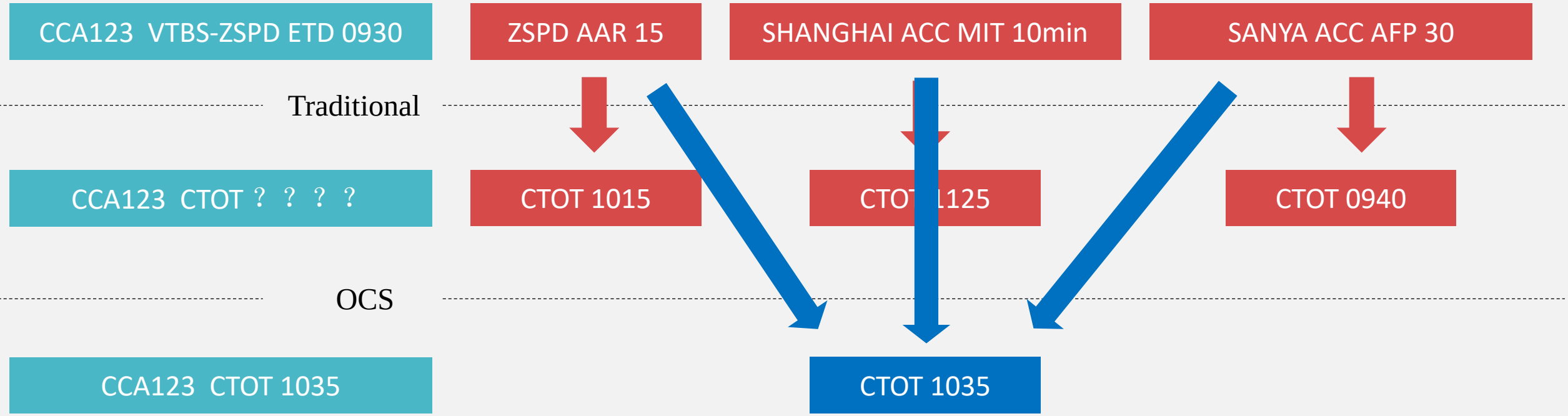
Harmonizing ATFM measures

CMCP+ High Compatibility

CTOT is calculated by CMCP which is generally supported by the system and has high compatibility. Regarding to ATFMU without computing ability, it can take traditional measures including GDP,AFP,MIT,MDI,CTO,cherry picking, etc. When these ATFM measures (including dynamic ATC measures) or constraints go through ATFMU with computing ability on the limited traffic flow, this ATFMU can calculate the CTOT which meets all overlapped restrictions on this flow.

DISCUSSION

What is One CTOT Solution (OCS)?

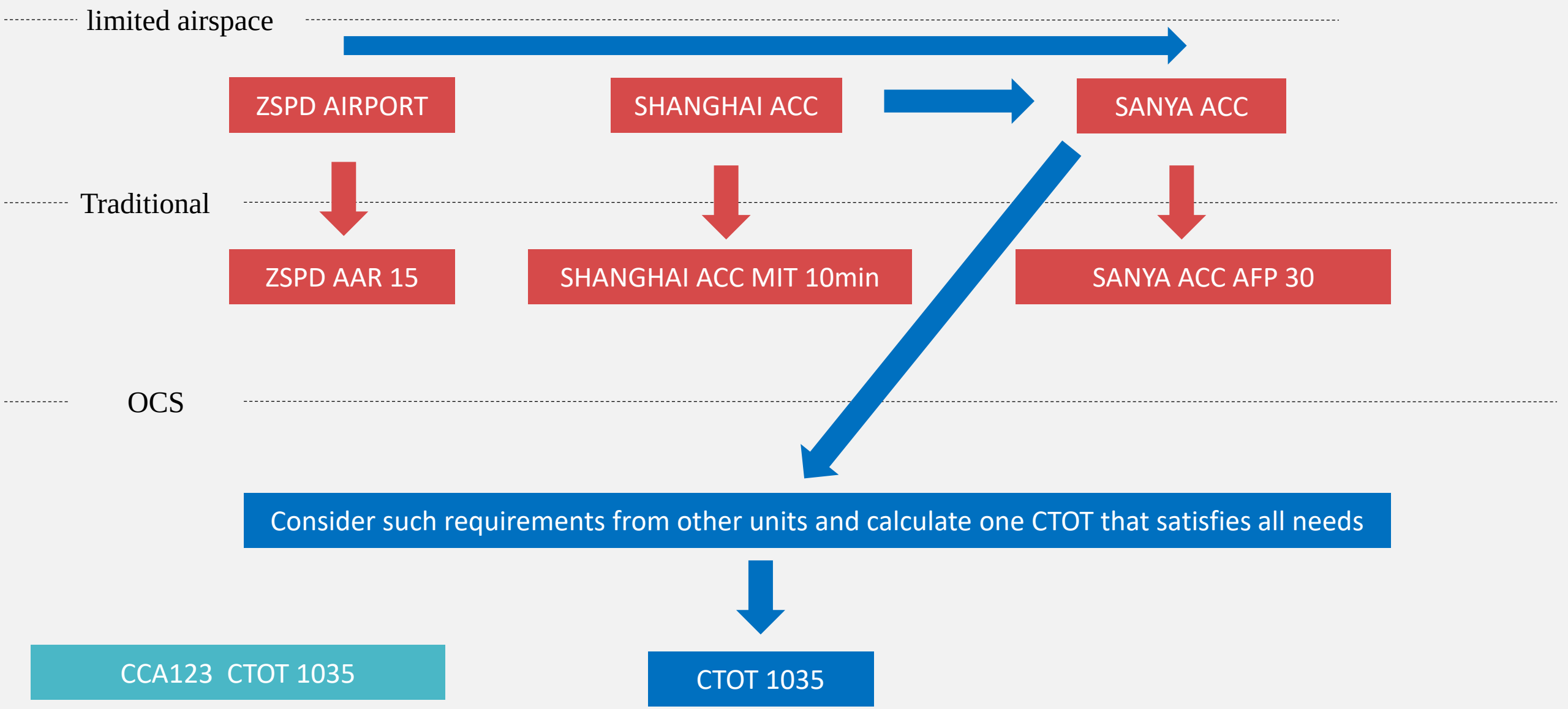


Traditional: one CTOT usually stems from an ATFM measure

OCS: one CTOT corresponds with multiple ATFM measures

DISCUSSION

What is One CTOT Solution (OCS)?

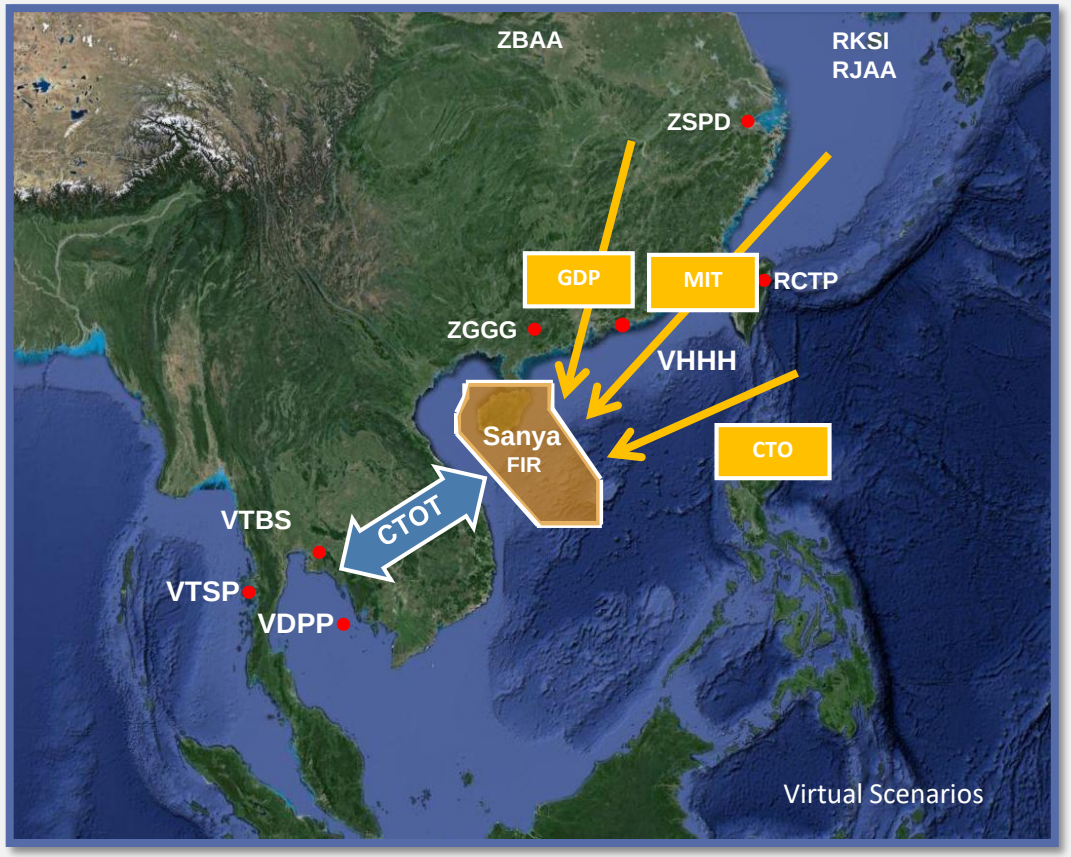


DISCUSSION

One CTOT Solution (OCS)

ONE CTOT SOLUTION (OCS)

1. "Conflicting"to "Harmonizing" ATFM measures
2. Unlimited ATFM Measures at the same time
3. One CTOT corresponds with multiple ATFM measures



DISCUSSION

How to achieve OCS? Collaborative Multi-constraint Conversion Program (CMCP+)

Phase I (2015-2022)

MIT 1 | MIT 2 | MIT 3 | MIT 4 | MIT ……

C M C P

Considering multiple MITs which are based on the same basic point

One CTOT

Phase II (2023-202X)

MIT | GDP | AFP | MDI | CTO ……

C M C P +

All measures should be taken into account with the foundation of the waypoint or area

One CTOT

DISCUSSION

The Conops of Collaborative Multi-constraint Conversion Program (CMCP+) - Steps

Transfer

1

Different ATFM measures on the same traffic flow, capacity used in this traffic flow, and other restrictions can transfer to the same point or area by translation, split and conversion, **forming a common benchmark point or area**

Calculation

2

CTOT that meets various restrictions will be calculated for the regulated flight by considering all requirements of the benchmark point or area

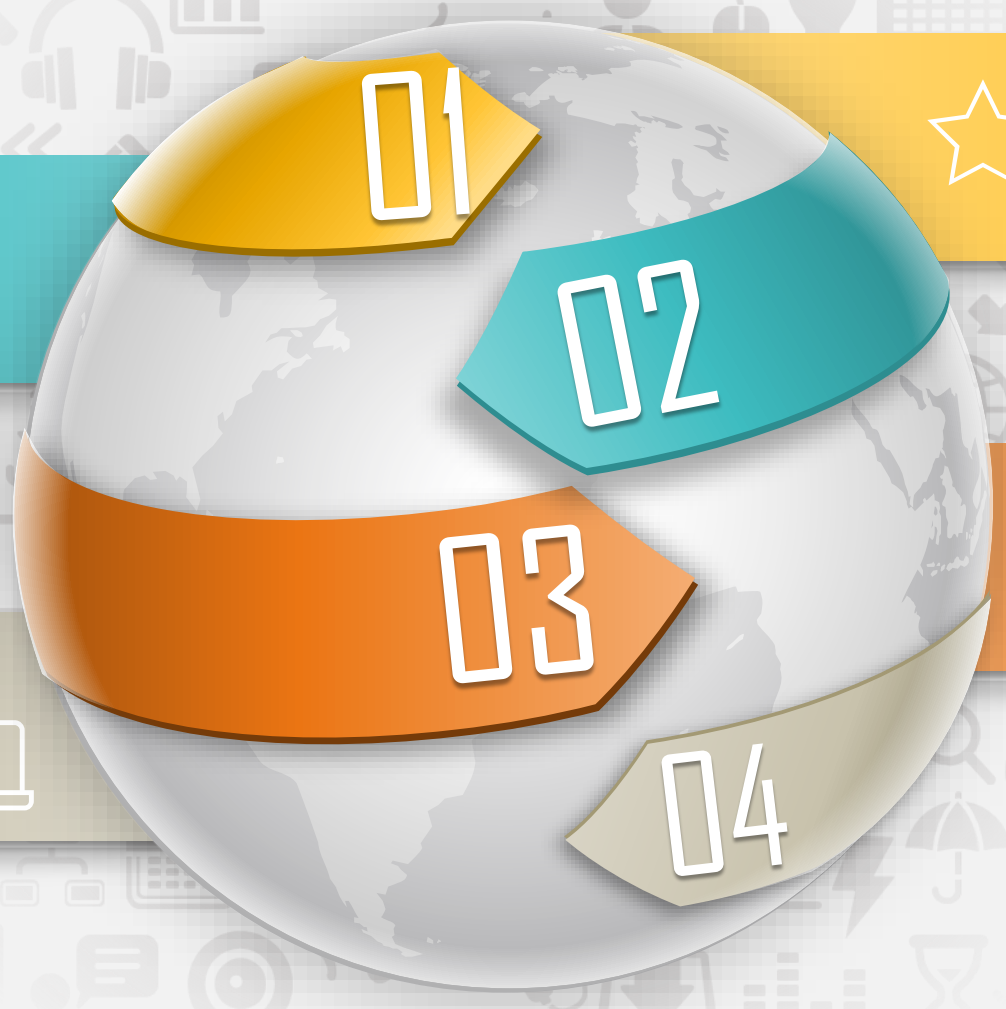
Coordination

3

Coordination about flights can be made by the Transit Units (TSU) of the benchmark point or area

DISCUSSION

The Conops of Collaborative Multi-constraint Conversion Program (CMCP+)



01 Functions to calculate unlimited ATFM measures

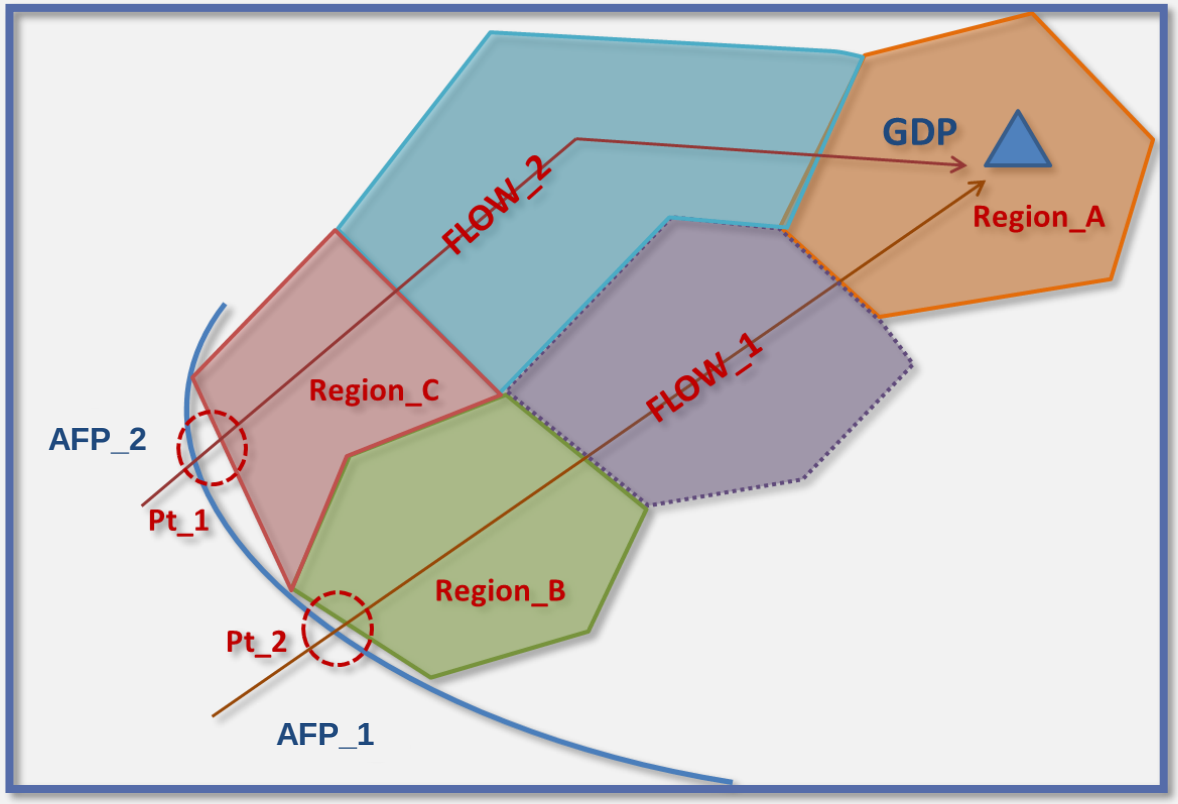
02 One CTOT can satisfy various restrictions of complex situations

03 Carry out the CTOT without concerns on any restrictions

04 A highly efficient solution in the face of conflicting ATFM measures

DISCUSSION

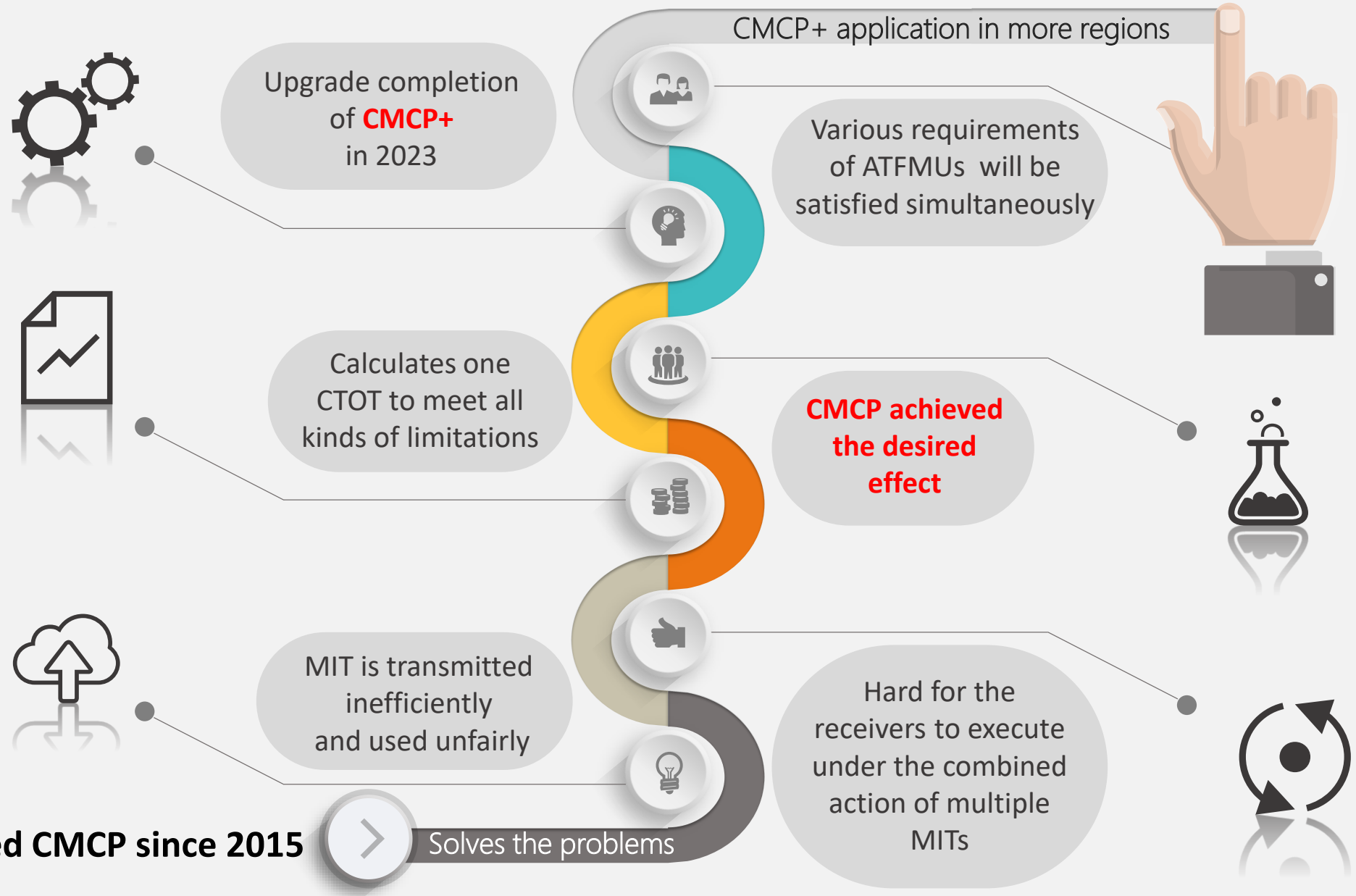
How to divide the GDP of a limited airport into two different traffic flows?



	GDP	AFP_1	AFP_2
Type of constraint	measures	information	information
Initiating unit	Region_A	Region_A	Region_A
Receiving unit	—	Region_B	Region_C
Constraint point	—	Pt_1	Pt_2
Regulated time period	9:00-12:00	7:20-10:20	7:40-10:40
Traffic stream	Regulation：domestic Exemption：FLOW_1 Exemption：FLOW_2	Regulation FLOW_1	Regulation FLOW_2
Requirement	—	20min MIT	2 aircrafts per 15min

DISCUSSION

CMCP+ can be used for reference and application in more regions



Implemented CMCP since 2015

CONTENTS

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ACTION BY THE MEETING

- Note the information contained in this paper
- Improve CMCP+ together so as to provide convenience for application in practice
- Suggest considering CMCP+ as one of main ways to solve conflicting ATFM measures in the Asia and Pacific region
- Suggest that CMCP be noted in the next amendment of “Asia Pacific Regional Framework for Collaborative ATFM” so as to make a convenience for reference and application by concerned States and Administrations
- Discuss any relevant matters as appropriate

THANKS FOR YOUR ATTENTION

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