



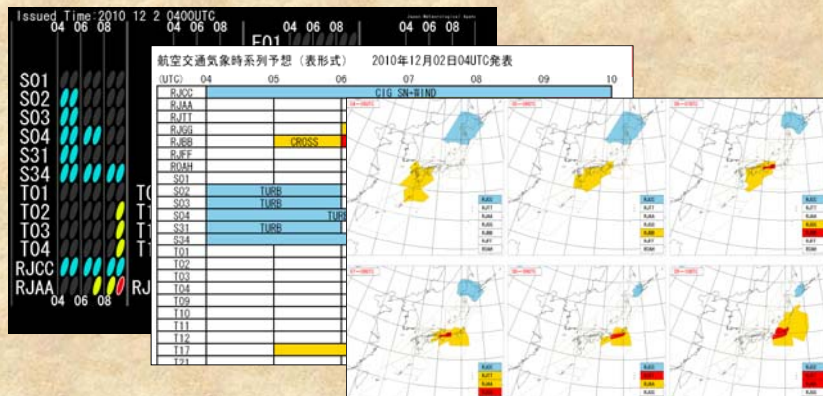
## CONTENTS

- 1. PURPOSE**
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## 1. PURPOSE

## What is ATMet category forecast ?

- Product for the purpose of supporting ATM
- Probability which weather impact on air traffic flow



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2. **Specification**
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## 2. Specification

Contents :

Probability which weather conditions  
impact on air traffic flow

The Probability is shown in four ranks



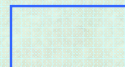
RED



YELLOW



BLUE



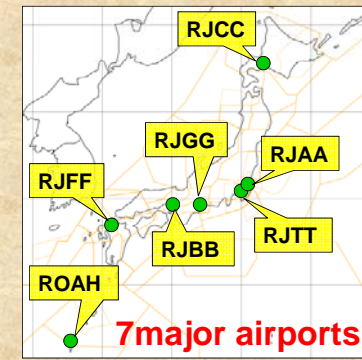
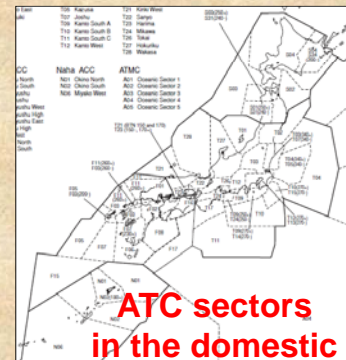
NO-COLOR

High ← Probability → Low

## 2. Specification

Valid : 6 hour later (hourly)

Target areas : ATC sectors in the domestic  
airspace and 7 major airports



## 2. Specification

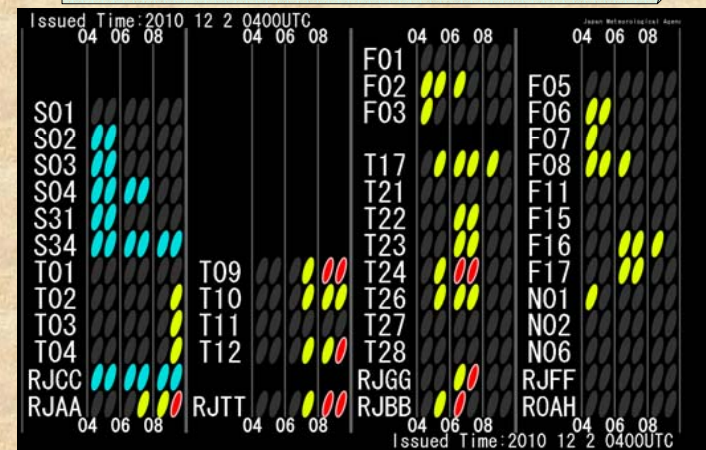
Update : By 15min every hour  
(Except 14~16UTC)

**Inform : ATMC, some ATC centers, Airlines and aviation weather offices**

## 2. Specification

FORM : (Table format)

### Notice in the ATMC operations room



## 2. Specification

FORM : (Table format)

Share information by using one of the large monitors in front of the operations room

**ATMet category forecast**



## 2. Specification

FORM : (Table format)



Air Traffic Demand Chart

Similar format to Air Traffic Demand Chart

ATMC officers can understand easily

## 2. Specification

FORM : (Tabular format)

Provide for the related organizations out of the ATMC



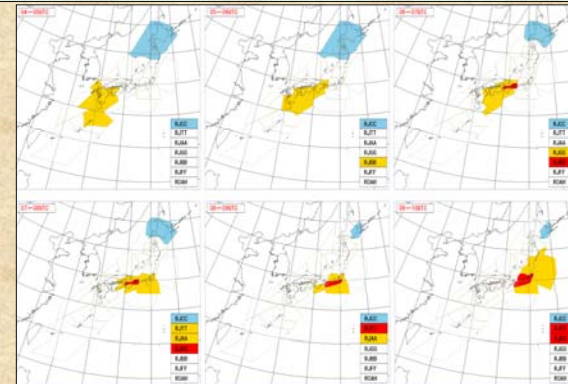
Show the color-code with the abbreviation

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## 2. Specification

FORM : (map-type format)

Provide for the related organizations out of the ATMC



Show only color-code on the map

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## 3. ATMet category forecast criteria

	RJTT	RJAA	RJGG	RJBB	RJFF	ROAH	RJCC	ATC SECTOR
RED	crosswind component to runway $\geq 35k$ crosswind component to runway $\geq 35k$ with moderate or heavy precipitation visibility $< 600m$ ceiling $< 200ft$							the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 50\%$
	TS OHG snow fall rate $\geq 1cm/h$ wind speed at surface $\geq 30k$ and wind speed below 5000ft $\geq 50k$							the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 50\%$
YELLOW	wind speed $\geq 34k$ with gust $\geq 50k$ crosswind component to runway $\geq 35k$ crosswind component to runway $\geq 35k$ with moderate or heavy precipitation wind speed at surface $\geq 30k$ and wind speed below 5000ft $\geq 50k$							CB exists on selected runway or on selected area the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 20\%$
	TS ceiling $< 200ft$ moderate or heavy snow CB in HANEDA sector CB in NARITA sector							the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 20\%$
BLUE	TS in TAF but CB doesn't exist in the airspace wind speed $\geq 30k$ with snow ceiling $< 200ft$							the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 10\%$ moderate to severe turbulence above FL180

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### 3. ATMet category forecast criteria

#### How to determine the criteria

Define: Probability which weather conditions impact on air traffic flow

probability **15 ~ 24%** **25 ~ 49%** **50 ~ 100%**

investigations  
on the past  
SIG-WX cases

service rules  
of airlines

adjusting the  
opinion with  
ATM officers

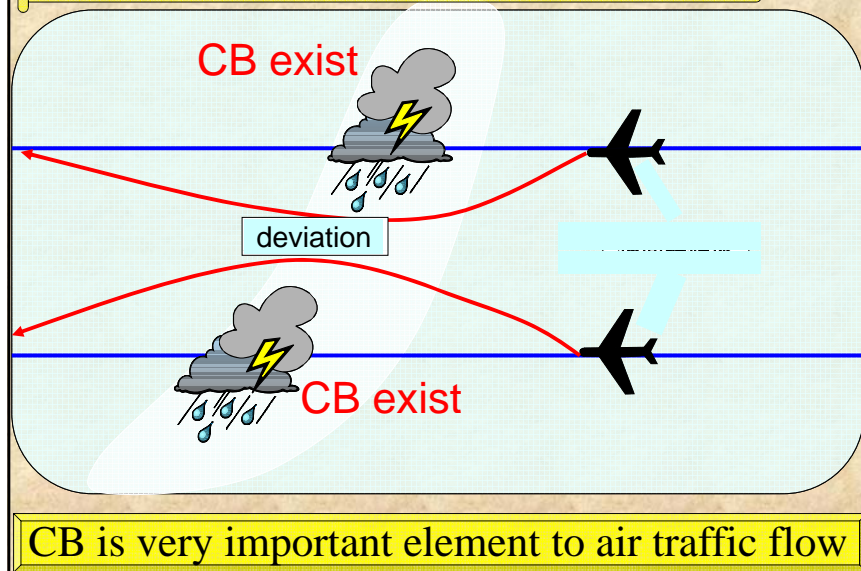
### 3. ATMet category forecast criteria

target area color code	RJTT	RJAA	RJGG	RJBB	RJFF	ROAH	RJCC	ATC SECTOR
RED	wind speed $\geq 40kt$ crosswind component to runway $\geq 30kt$ crosswind component to runway $\geq 25kt$ with moderate or heavy precipitation visibility $< 600m$ ceiling $< 200m$ snow fall rate $\geq 1cm/3h$ wind speed at surface $\geq 30kt$ and wind speed below 5000ft $\geq 60kt$ wind speed below 5000ft $\geq 60kt$							the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 50\%$ TS OHD CB exists on selected airway or on selected area
YELLOW	crosswind component to runway $\geq 25kt$ crosswind component to runway $\geq 20kt$ moderate or heavy precipitation wind speed at surface $\geq 30kt$ and wind speed below 5000ft $\geq 60kt$ wind speed below 5000ft $\geq 60kt$							the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 20\%$ CB exists on selected airway or on selected area
BLUE	wind speed $\geq 20kt$ with snow ceiling $< 200m$							the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 10\%$ moderate to severe turbulence above FL180

The Possibility of go-around  
or holding rises extremely

RJTT · · Probability of air traffic flow control is

### 3. ATMet category forecast criteria



### 3. ATMet category forecast criteria

target area	RJTT	RJAA	RJGG	RJBB	RJFF	ROAH	RJCC	ATC SECTOR
RED	wind speed $\geq 40k$ crosswind component to runway $\geq 30k$ crosswind component to runway $\geq 25k$ with moderate or heavy precipitation visibility $< 600m$ ceiling $< 200ft$ TS OHP snow fall rate $\geq 1cm/3h$ wind speed at surface $\geq 30k$ and wind speed below 5000ft $\geq 60k$							the proportion occupied with CB (top $\geq F1300$ ) in the sector $\geq 50\%$
YELLOW	wind speed $\geq 30k$ crosswind component to runway $\geq 25k$ wind speed at surface $\geq 20k$ and wind speed below 5000ft $\geq 40k$ CB in HANEDA sector							the proportion occupied with CB (top $\geq F1300$ ) in the sector $\geq 20\%$
BLUE	wind speed $\geq 20k$ crosswind component to runway $\geq 20k$ wind speed at surface $\geq 15k$ and wind speed below 5000ft $\geq 30k$ snow fall rate $\geq 3cm/3h$ where turbulence above F180							the proportion occupied with CB (top $\geq F1300$ ) in the sector $\geq 10\%$ where turbulence above F180

**CB exists on selected airway or on selected area**

many aircrafts may deviate or change the route

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## 4. Operation

### 4.1 The automation of the task

There are numerous criteria to check.



It is difficult to do all the task by hand, in limited time.



System automatically checks the criteria.

numerical weather  
prediction

Aerodrome sequential  
forecast

**BUT** . . Not all the criteria are checked automatically.

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## 4. Operation

### 4.1 The automation of the task

Elements that could be checked automatically referring to  
Aerodrome sequential forecast ( about 70% of all the

criteria)		RJTT	RJAA	RJGG	RJBB	RJFF	ROAH	RJCC	ATC SECTOR
RED	color code								
		wind speed $\geq 40kt$ crosswind component to runway $\geq 30kt$ crosswind component to runway $\geq 25kt$ with moderate or heavy precipitation visibility $< 600m$ ceiling $< 200ft$							the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 50\%$
		TS OHD							
	wind speed at surface $\geq 30kt$ and wind speed below 5000ft $\geq 60kt$	wind speed below 3000ft $\geq 60kt$				snow fall rate $\geq 5cm/h$ snow fall rate $\geq 3cm/h$ when wind direction $130^{\circ}\sim 240^{\circ}$			
YELLOW		wind speed $\geq 30kt$ with crosswind component to runway $\geq 30kt$ crosswind component to runway $\geq 25kt$ with moderate or heavy precipitation							CB exists on selected airway or on selected area
	wind speed at surface $\geq 30kt$ and wind speed below 5000ft $\geq 50kt$	wind speed below 3000ft $\geq 50kt$						the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 20\%$	
	TS								
	CB in HANEDA sector	moderate or heavy snow CB in NARITA sector	snow fall rate $\geq 5cm/h$ when wind direction $250^{\circ}\sim 110^{\circ}$						
BLUE		TS in TAF but CB doesn't exist in the aerodrome							the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 10\%$
		wind speed $\geq 30kt$ with snow ceiling $< 200ft$							moderate to severe turbulence above FL180

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## 4. Operation

### 4.1 The automation of the task

Elements that could be checked automatically referring to  
numerical weather prediction ( about 5% of all the

criteria)	RJAA	RJGG	RJBB	RJFF	ROAH	RJCC	ATC SECTOR
RED	wind speed $\geq 40kt$ crosswind component to runway $\geq 30kt$ crosswind component to runway $\geq 25kt$ with moderate or heavy precipitation visibility $< 600m$ ceiling $< 200ft$						the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 50\%$
	TS OHD						
	snow fall rate $\geq 5cm/h$ wind speed at surface $\geq 30kt$ and wind speed below 5000ft $\geq 60kt$	snow fall rate $\geq 5cm/h$ wind speed below 3000ft $\geq 60kt$				snow fall rate $\geq 5cm/h$ snow fall rate $\geq 3cm/h$ when wind direction $130^{\circ}\sim 240^{\circ}$	
	wind speed $\geq 30kt$ with crosswind component to runway $\geq 30kt$ crosswind component to runway $\geq 25kt$ with moderate or heavy precipitation						CB exists on selected airway or on selected area
YELLOW	wind speed at surface $\geq 30kt$ and wind speed below 5000ft $\geq 50kt$	wind speed below 3000ft $\geq 50kt$					the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 20\%$
	TS						
	ceiling $< 200ft$ moderate or heavy snow CB in HANEDA sector CB in NARITA sector					visibility $< 600m$ ceiling $< 200ft$ snow fall rate $\geq 5cm/h$ when wind direction $250^{\circ}\sim 110^{\circ}$	
BLUE	TS in TAF but CB doesn't exist in the aerodrome						the proportion occupied with CB (top $\geq FL300$ ) in the sector $\geq 10\%$
						wind speed $\geq 30kt$ with snow ceiling $< 200ft$	moderate to severe turbulence above FL180

## 4. Operation

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### 4.1 The automation of the task

Elements that are checked by hand ( about 20% of all the criteria )

criteria)		RJTT	RJAA	RJGG	RJBB	RJFF	ROAH	RJCC	ATC SECTOR
RED	rule code	wind speed $\geq 43kt$							the proportion occupied with CB (top $\geq 5000$ ) in the sector $\geq 50\%$
	crosswind component to runway $\geq 30kt$								
	crosswind component to runway $\geq 25kt$ with moderate or heavy precipitation								
	visibility $< 600m$ ceiling $< 300m$	visibility $< 400m$			visibility $< 800m$ with snow ceiling $< 400m$ with snow blowing snow				
	TS $\geq 40dB$ snow fall rate $\geq 3cm/h$								
YELLOW		wind speed at surface $\geq 30kt$ and wind speed below 3000ft $\geq 30kt$	wind speed below 3000ft $\geq 30kt$		snow fall rate $\geq 3cm/h$ snow fall rate $\geq 3cm/h$ when wind direction $180-360$				CB exists on selected runway or on selected areas  the proportion occupied with CB (top $\geq 5000$ ) in the sector $\geq 20\%$
	wind speed $\geq 34kt$ with snow $\geq 50kt$								
	crosswind component to runway $\geq 25kt$ crosswind component to runway $\geq 20kt$ with moderate or heavy precipitation								
	wind speed at surface $\geq 28kt$ and wind speed below 3000ft $\geq 28kt$	wind speed below 3000ft $\geq 30kt$							
	TS ceiling $< 200m$								
BLUE		moderate or heavy snow			visibility $< 400m$ visibility $< 1000m$ with snow ceiling $< 600m$ with snow snow fall rate $\geq 3cm/h$ when wind direction $250-110$				the proportion occupied with CB (top $\geq 5000$ ) in the sector $\geq 10\%$  moderate to severe turbulence above FL100
	CB in HANEDA sector	CB in NARITA sector							
	TS $\geq 40dB$ but CB doesn't exist in the area								

## 4. Operation

### 4.2 Flow of task

An actual flow of task is summarized in video.

[GO TO VIDEO](#)

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## 5. Assignment

target area color code	RJTT	RJAA	RJGG	RJBB	RJFF	ROAH	RJCC	ATC SECTOR	
RED	wind speed $\geq 48k$ crosswind component to runway $\geq 30k$ crosswind component to runway $\geq 25k$ with moderate or heavy precipitation							the proportion occupied with CB (top $\geq$ FL300) in the sector $\geq 50\%$	
	visibility $< 600m$ ceiling $< 300h$	visibility $< 400m$					visibility $< 600m$ with snow ceiling $< 400h$ with snow blowing snow		
	TS ORG								
	snow fall rate $\geq 1cm/h$					snow fall rate $\geq 5cm/h$ snow fall rate $\geq 3cm/h$ when wind direction 120-240°			
	wind speed at surface $\geq 30k$ and wind speed below 5000h $\geq 60k$	wind speed below 3000h $\geq 60k$							
	YELLOW	wind speed $\geq 36k$ with gust $\geq 50k$ crosswind component to runway $\geq 25k$ crosswind component to runway $\geq 20k$ with moderate or heavy precipitation							CB exists on selected airway or on selected area  the proportion occupied with CB (top $\geq$ FL300) in the sector $\geq 20\%$
wind speed at surface $\geq 30k$ and wind speed below 5000h $\geq 50k$		wind speed below 3000h $\geq 50k$							
TS									
ceiling $< 300h$					visibility $< 400m$ visibility $< 600m$ with snow ceiling $< 600h$ with snow snow fall rate $\geq 3cm/h$ when wind direction 250-110°				
CB in HANEDA sector		CB in NARITA sector							
BLUE		TS in TAF but CB doesn't exist in the airspace							
	wind speed $\geq 25k$ with snow ceiling $< 300h$								

©All weather conditions can be checked automatically

## 5. Assignment

©There is a task of how to determine ATMet category forecast criteria for airports that have not so many traffic to be managed.

RJGG , RJBB  
RJFF , ROAH



The same criteria as RJAA are applied.

We continue to investigate the weather conditions when Air Traffic Flow Controls were applied.

We have to evolve the means to support ATM!



