

Lisbon 16<sup>th</sup> February 2012

Testing & Training Activities

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## Testing - General



- It is recognised that the best way to mitigate many concerns is to ensure adequate testing is performed in due time
  - Note: there is no fallback procedure for 2012
- ICAOs Programme Phases document recommends testing to have been performed by 2<sup>nd</sup> quarter of 2012
- Two main types of testing with external partners (interface/consistency testing) that can be considered
  - Static using data files to exchange test samples and results allowing batch processing off-line
  - Dynamic using normal communication medium (AFTN) and system processing in real time

## **IFPS** Testing



- Three types of testing possibilities:
  - IFPS Validation System (IFPUV)
  - Static Testing
  - Dynamic Operational Test sessions (OPT)
- Participation open to all, EUR and non-EUR

## IFPUV [1]



- A tool to test the validity of FPL messages only
- Can be used by AOs, AROs or flight plan service providers (CFSPs) to validate New format FPLs
- Can be used by ANSPs in the creation of valid New format FPLs for testing purposes
- Can be used for almost all 2012 validation purposes regardless of departure, destination and route. It can therefore even be used by AOs that never normally fly within European airspace

(A 'valid' response will not ultimately be achieved if the route does not contain a portion within Europe. However, the 2012 changes are almost all syntax/semantic related and the IFPUV will always report syntax errors)

## IFPUV [2]



 Is available today via AFTN (EUCHZMFV), SITA (BRUEY7X), B2B or Public Web:

http://www.cfmu.eurocontrol.int/cfmu/public/subsite\_homepage/homepage.html



## **Static Testing**



- The exchange, preferably via e-mail, of files containing:
  - → example test messages (FPLs, CHG, DLA, CNL, ARR, etc.)
  - ← processing results
- Can be used by:
  - AOs, AROs or CFSPs to validate New format messages produced by their system with IFPS and/or relevant ANSPs
  - ANSPs to ensure consistency with IFPS:

A file(s) of New format flight data, considered valid by IFPS, is made available by CFMU for:

- IFPS States
- Non-IFPS States & other regions
- ANSPs to ensure consistency with other ANSPs
- Test data should be:
  - consistent with currently applicable AIRAC data
  - attention paid to DOF/ values

## **OPT** Testing



- Requires significant coordination effort by all concerned to ensure test addresses are configured, test data created and test scenario achieved
- Test Schedule
  - OPT1: 30 January 3 February 2012
  - OPT2: 20 24 February 2012
  - OPT3: 7 11 May 2012
  - OPT4: 4 8 June 2012
  - OPT5: 3 7 September 2012
  - OPT6: 24 28 September 2012

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## **OPT - Participation**



- Who can participate
  - States receiving an IFPS service, inc. 'copy' addressees
  - Non-IFPS States via use of the 'AD line' addressing mechanism
  - Any other flight plan recipients e.g. Airports, strategic planning units, etc.
  - Any AOs, AROs, CFSP flight plan originators
- Prior registration required for <u>each</u> test session
  - Registration form will be provided via 'Test Plan' document

## **OPT** – Registration Data



- Flight Plan originators are required to indicate:
  - the address from which they will send messages to the IFPS test system
  - willingness to receive ACK, MAN, REJ to the address provided
- ANSPs are required to indicate:
  - the unit or entity for which messages are requested to be sent by the IFPS test system e.g. Kiev ACC, Yerevan TWR, etc.
  - the test address to be used i.e. the test address to be assigned to the specified unit where messages from IFPS will be received;
  - the same information as for flight plan originators in case the ATC unit also intends (or needs!) to send test flight plans

## **OPT – Test Scenario**



- Each test session will simulate the following phases:
  - Pre-15 Nov (Transition Phase)
    - IFPS: Acceptance of both Old and New formats
    - ANSP: Reception of both Old and New formats or, Old only (IFPS translation)
  - Roll-over Period
    - IFPS: Acceptance of Old + New → Acceptance of New only
    - ANSP: Reception of Old + New or Old only → Reception of New only
  - Post-15 Nov
    - Acceptance of New only by IFPS → New only received by ANSP

# Standard Test Configuration – IFPS States



Note: If a mixture of both Old + New is required by an ATCU then the '2012 Ready' parameter must be set to an earlier date/time for that unit. To be requested via Registration Form.

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### 'Mixed' Scenario – IFPS States





## **OPT Basic Testing**



- Syntax & Semantic Testing with Standard Scenario
  - IFPS acceptance of New format messages can be tested throughout the complete session;
  - IFPS refusal of Old content can only be tested after 07:00 UTC on Wednesday;
  - Reception by ATC units within the IFPS area (and Copy addresses) of New format can only be achieved after 11:00 UTC on Thursday;
  - Reception by ATC units outside the IFPS area of New format can only be achieved after 07:00 UTC on Wednesday;
  - Reception by ATC units within the IFPS area (and Copy addresses) of Old format messages translated from New can only be achieved prior to 11:00 UTC on Thursday;
  - Reception by ATC units outside the IFPS area of Old format messages translated from New can only be achieved prior to 07:00 UTC on Wednesday





## **OPT** – Advanced Testing



- Advanced Test Scenarios
  - 'Translation'
    - IFPS acceptance of both Old and New formats
    - IFPS translation
    - ANSP reception of both Old and New formats, or, Old only (IFPS translation)
  - 'Transition'
    - IFPS application of '2012\_READY' parameter
    - ANSP reception of Old only or Old + New in accordance with parameter setting
  - 'Roll-over'
    - IFPS: Acceptance of Old + New → Acceptance of New only
    - ANSP: Reception of Old + New or Old only → Reception of New only

## Translation Test Case (TO)



Reference	TRANS_OLD (TO)
Objective	<ol> <li>Demonstrate the ability of IFPS to convert New format into Old format in accordance with ICAO_2012_READY_DATE parameter setting of the addressee</li> <li>Demonstrate the ability of an ATC unit to process Old format converted from New format.</li> </ol>
Pre-requisites	<ifps_switch> set to 'New only' at time 'S' <icao_2012_ready_date> set to time 'R' (R = S + 28hr) <fpl_dist_time> set to 6hr <max_filing_time> set to 24hr (i.e. DOF limit)</max_filing_time></fpl_dist_time></icao_2012_ready_date></ifps_switch>
Test Data	C1. Valid New format messages relevant to the ATC unit concerned and with an entry time into the ATC units airspace (EOBDT) before 'R'
Expected Result	C1. Old format messages provided by IFPS to the ATC unit

#### Translation Test Case (TO) – IFPS States



"00:00UTC 15 Nov" IFPS Switch ('S') Wed. 07:00 UTC  $V = \frac{TO_C1}{c_0}$ 

"12:00UTC 16 Nov" 2012 Ready Date ('R') Thur. 11:00 UTC

- = FPL submission time & format (N=New, O=Old)
- = FPL distribution time & format (N=New, O=Old)
- = EOBDT (Off Block Date & Time)

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TO\_C1 = Test Case reference



### Transition Test Cases (TN) – IFPS States

Reference	TRANS_NEW (TN)
Objective	<ol> <li>Demonstrate the ability of IFPS to provide New format in accordance with ICAO_2012_READY_DATE parameter setting of the addressee.</li> <li>Demonstrate the ability of an ATC unit to process New format</li> </ol>
Pre- requisites	<ifps_switch> set to 'New only' at time 'S' <icao_2012_ready_date> set to time 'R' (R = S + 28hr) <fpl_dist_time> set to 6hr <max_filing_time> set to 24hr</max_filing_time></fpl_dist_time></icao_2012_ready_date></ifps_switch>
Test Data	C1. Valid New format message sent to IFPS after 'R' with an entry time into the ATC units airspace (EOBDT) less than 6hr in the future
	C2. Valid New format message sent to IFPS before 'R' with an entry time into the ATC units airspace (EOBDT) less than 6hr in the future
	C3. Valid New format message sent to IFPS just before 'R' with an entry time into the ATC units airspace (EOBDT) greater than 6hr in the future
Expected Result	C1. New format messages provided by IFPS to the ATC unit
	C2. Old format messages provided by IFPS to the ATC unit
	C3. New format message provided by IFPS to the ATC unit 6 hr before EOBDT



### Roll-Over Switch Test Cases (RS) – IFPS States

Reference	ROLL_SWITCH (RS)
Objective	1. Demonstrate the ability of IFPS to switch from accepting both Old and New formats to accepting New format only
	2. Demonstrate the ability of an ATC unit to achieve a clean switch from Old to New format.
Pre- requisites	As before
Test Data	C1. Valid Old format messages sent to IFPS before 'S' with an entry time into the ATC units airspace (EOBDT) after 'S' but before 'R'
	C2. Valid New format messages sent to IFPS before 'S' with an entry into the ATC units airspace (EOBDT) after 'S' but before 'R'
	C3. Valid Old format messages sent to IFPS before 'S' with an entry into the ATC units airspace (EOBDT) after 'R'
	C4. Valid Old format messages sent to IFPS after 'S'
Expected Result	C1. Reception from IFPS in Old format, at EOBDT-6 hrs
	C2. Reception from IFPS in Old format, as translated by IFPS, at EOBDT -6hrs i.e. prior to <icao_2012_ready_date> time</icao_2012_ready_date>
	C3. Error – EOBDT outside acceptable range (<24hr in advance)
	C4. Error – Old format not accepted



#### Test Cases (AD) – Non-IFPS States



Reference	AD-Line (AD)
Objective	<ol> <li>Demonstrate IFPS switch from accepting both Old and New formats to accepting New only.</li> <li>Demonstrate the ability of IFPS to distribute to AD line addressees in Old format only ahead of the IFPS Switch date/time.</li> <li>Demonstrate the ability of IFPS to distribute in New format following the IFPS Switch date.</li> </ol>
Pre- requisites	<ifps_switch> set to 'New only' at time 'S' <fpl_dist_time_for_ad addressees=""> set to 6hr <max_filing_time> set to 24hr</max_filing_time></fpl_dist_time_for_ad></ifps_switch>
Test Data	C1. Valid New format message sent to IFPS before 'S' with an entry time into the ATC units airspace (EOBDT) before 'S'. C2. Valid Old format messages sent to IFPS before 'S' with an entry time into the ATC units airspace (EOBDT) after 'S'. C3. Valid New format messages sent to IFPS before 'S' with an entry into the ATC units airspace (EOBDT) after 'S' C4. Valid Old format messages sent to IFPS before 'S' with an entry into the ATC units airspace (EOBDT) > 24hr in the future C5. Valid Old format messages sent to IFPS after 'S'
Expected Result	C1. Reception from IFPS in Old format C2. Reception from IFPS in Old format, at EOBDT-6 hrs C3. Reception from IFPS in New format at EOBDT -6hrs C4. Error – EOBDT outside acceptable range (<24hr in advance) C5. Error – Old format not accepted

#### Transition + Rollover Test Cases – Non-IFPS States



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## OPT – Test Data



- Test Data
  - Creation of New format FPLs necessary
    - Participation of ANSP + local AOs in the same session is encouraged
  - Compatibility with AIRAC
  - Callsigns which:
    - are easily recognised as test messages
    - will not be confused with the operational messages, which are copied to the test systems from the operational system
    - Eg.DLH01XX1st test FPL from LufthansaDDW14XX14th test FPL from ARO Bremen

### **Documentation - Test Plan**



 All 2012 testing related information (inc. Test Registration form) is published via the '<u>EUR 2012 Test Plan</u>', available via the web site

http://www.cfmu.eurocontrol.int/cfmu/public/subsite\_homepage/homepage.html





# Training

### Training



- Computer Based Training (CBT) to be made available via Network Operations web pages
- Aimed primarily at flight plan originators
- Provides guidance concerning 2012 flight planning changes and how they impact EUR and IFPS operations
- To be available March 2012



