

AEEC DLK USER FORUM



ATS services based on
Arinc 623.
Implementation in France.

contents

- Service approval
 - from experiment to entry into service
- Service operation
 - service deployment and statistics
- Issues
- Future
- Questions

Service approval

- ATS supported by ACARS
 - DCL experiment begun 1993 in Paris-CDG airport
 - ATIS experiment begun end 1994 in Paris-Orly airport
 - experiment in free-text, evolution to full Arinc 623

Service approval

- DCL system approval
 - Adoption of Eurocae ED-85 june 1998
 - conformance study mid-2000
 - | ground domain (CSP and ATS provider)
 - operational and technical
 - service level agreement with CSP
 - | airborne domain

Service approval

- DCL system approval by authority oct 2000
- ATIS system
 - Eurocae ED-89 adopted sept 2000
 - safety analysis identifies critical elements
 - | development of a new ATIS server to meet the requirement preferred to new operational procedure

Service approval

■ Regulatory publication on DCL

■ AIC A19/00 Jul 20/00

- Confirmation for SID and level to which the aircraft is climbing

■ AIC A22/00 OCT 12/00

- Implementation of the data link departure clearance service (DCL service) on some French aerodromes.

■ AIP France : ENR 1.5-13 Nov 30/00

- Departure clearance issuing service through a digital data link system (DCL)

Service approval

■ DCL in practice

- any airline with equipped aircraft can directly proceed DCL by datalink in defined location
- pre-requisite : certified airborne equipment showing conformance to the standards
- information to the french civil aviation technical service (STNA) for follow-up purpose

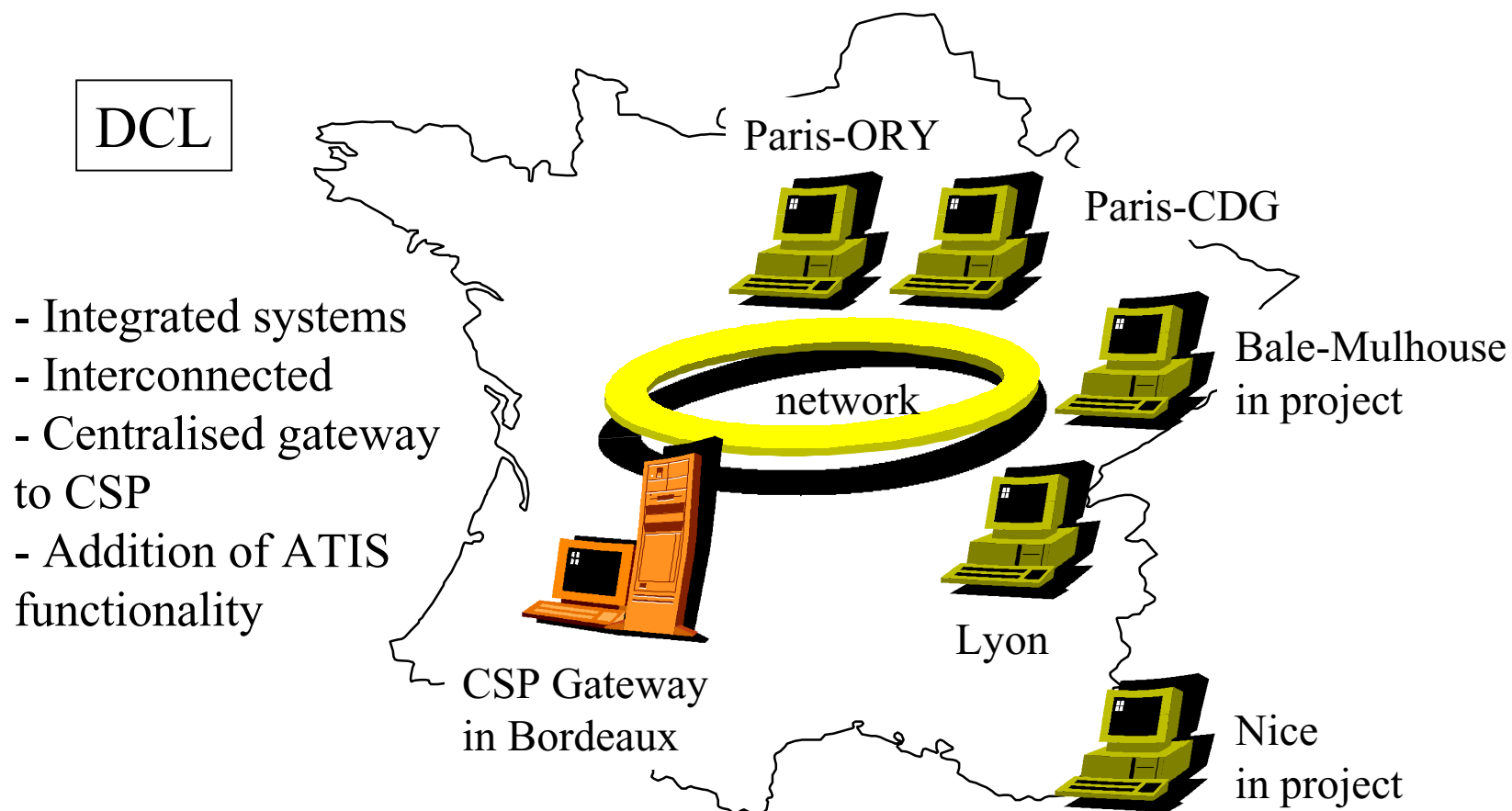
Service operation

ATIS

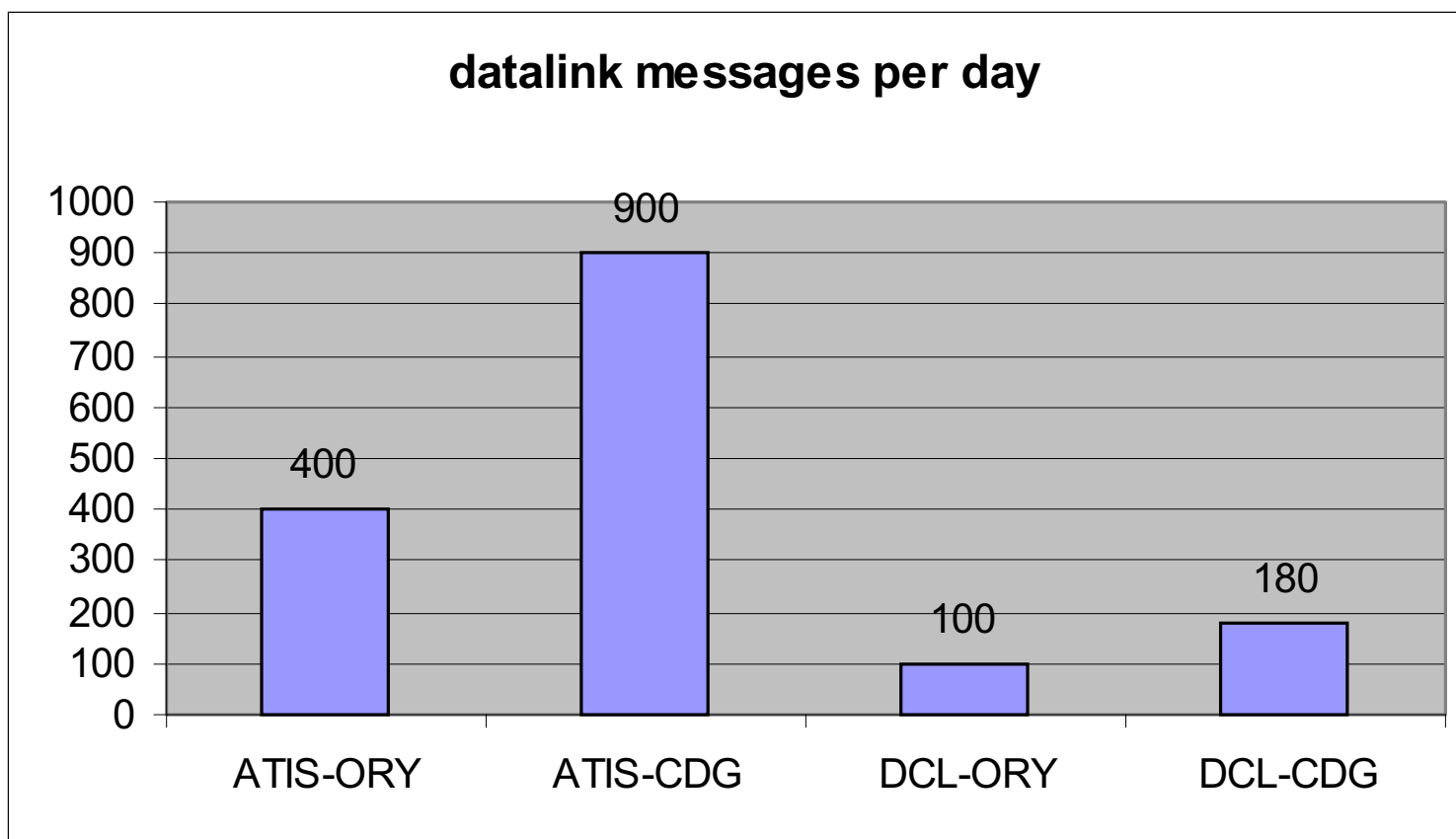
- Stand-alone systems connected to CSP (to be updated)



Service operation



Service operation



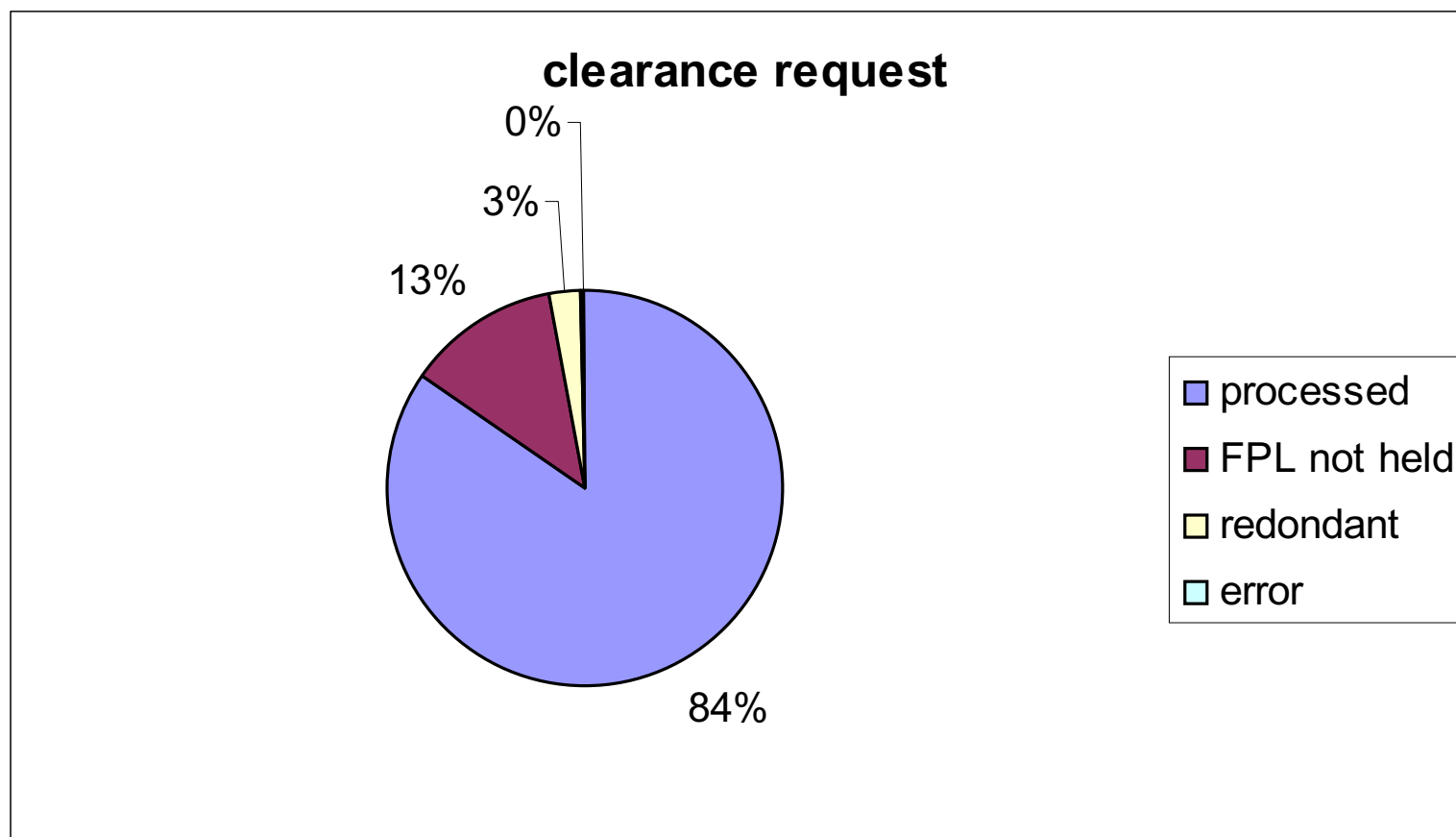
■ ATIS UP, DCL DN (ory june 2001, cdg july 2001)



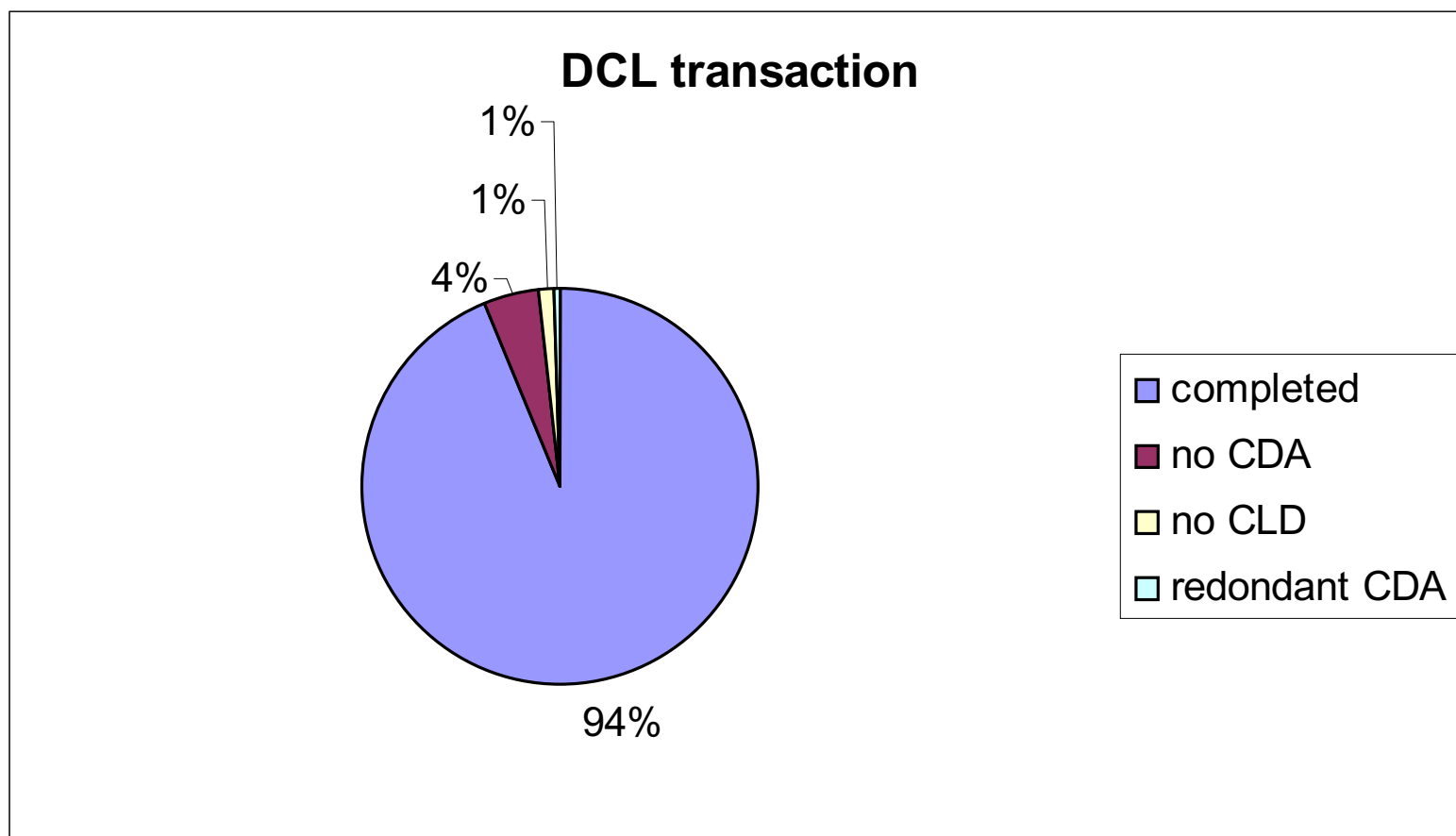
Service operation

AIRLINES	ATIS	DCL
American airlines	LFPG	
Air France	LFPG, LFPO	LFPG, LFPO, LFLL (max 6/d)
Air Algerie	LFPG	
Finnair	LFPG	
British airways	LFPG	LFPG
Cathay pacific	LFPG	
Lufthansa		LFPG
Iberia	LFPO	LFPO
Air liberté	LFPO	
Aom	LFPO	
Korean airlines	LFPG	
El Al	LFPG	
All Nippon Airways	LFPG	
Royal Air Maroc		LFPO
Sabena		LFPG
Scandinavian	LFPO, LFPG	LFPG
Singapour airlines	LFPG	
Swissair	LFPG	LFPG
Tunis air	LFPO, LFPG	
Transworld airlines		(LFPG ?)

Service operation



Service operation



Issues

■ DCL

■ Flight Plan not held

■ wrong Flight ID

- Flight ID in arinc 623 defined as the filed flight plan

■ incorrect reset of Flight ID

- flight ID identical to previous flight

Issues

■ DCL

■ Flight Plan not held

- | erroneous Flight ID computation (leading 0)
 - arinc 618 Flight ID : IATA code + 4 characters fixed-length field, filled with zeros if less than 4
 - arinc 623 Flight ID : 2-7 characters variable-length field
 - arinc 618 FI used to compute arinc 623 FI
 - addition of zeros if less than 4 characters after airline ID leads to erroneous Flight ID in arinc 623
- | possibility of crew input needed for FPL parameters

Issues

■ DCL

- aircraft type in clearance request
 - | may not match exactly the real aircraft type
 - | information used in FDPS during all the flight
- departure time notification field in clearance
 - | in Arinc 623 'ADT' data field
 - | gate departure or take-off time ?

Issues

■ standards

- need to have operational performance requirement
 - realistic
 - easy to measure and monitor
- mitigation means should avoid introduction of new operational procedures

Issues

■ conformance

■ ATS domain

- use of a Conformance Testing Tool (CTT)
- used as a tester, reference tool to be qualified and recognised

■ CSP domain

- one service level agreement for one com provider
- it does not cover internetworking and protocol transcoder

Future

■ Next step : Link 2000 + France

■ phase 1 Services set (2006-7)

- DLIC (Contact initial), ACM (ATC Communication Management), CAP, FLIPCY (Flight plan consistency), DCL with ATN

■ phase 2 Services set (from 2007)

- ACL (ATC Clearance), AMC (ATC microphone Check), ATIS ATN

■ transition to DCL and ATIS ATN

Questions

- Thank you for your attention.
- Any questions ?
 - marce_damien@stna.dgac.fr