



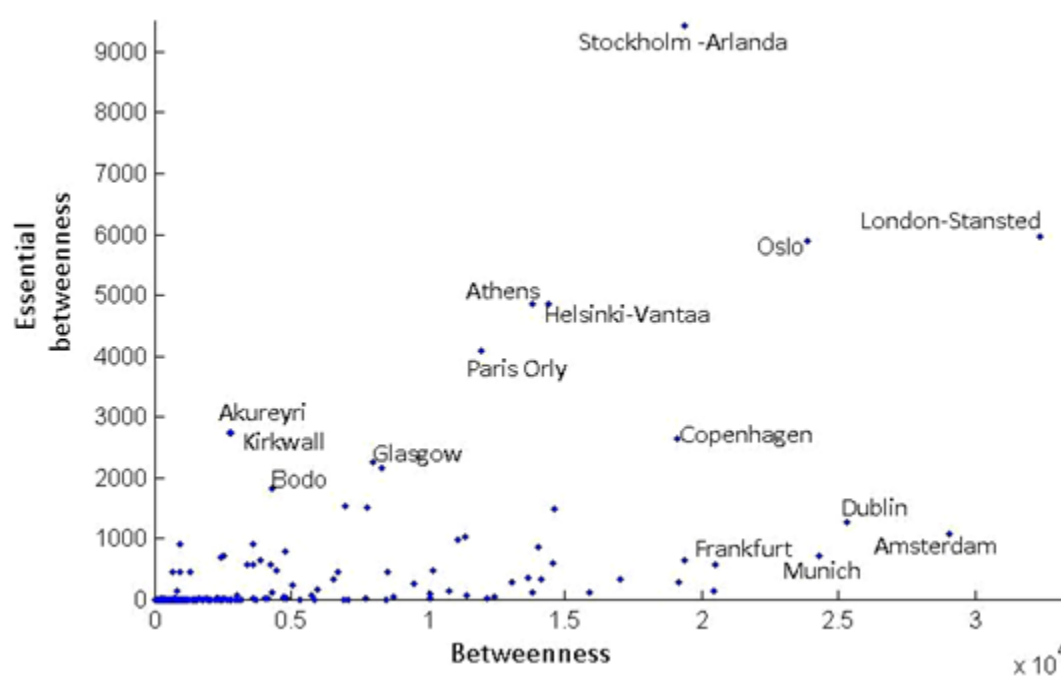
# The potential of new Transfer Formats

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*May 2016*

## Early findings on LCC transfer potential

- In our early studies (2006 data) , we analysed the intra EU network by looking the connectivity potential
  - ✓ The majority of LCC services were clustered in a unique transnational group
  - ✓ Several airports could be interconnected only through LCC dominated airport



*Betweenness and essential betweenness with reference to the intra European connectivity. (2006 analysis)*



## Early findings on LCC transfer potential

- A large part of optimum travel time interconnections were not managed by the alliances
  - ✓ Interconnection within and between LCC airlines
  - ✓ Interconnection between a LCC and a traditional carrier
  - ✓ Interconnection between two traditional carrier belonging to different alliances (and with no code sharing agreements)
  
- Potentially, passengers were able to travel catching up this ‘theoretically’ optimum connections within Europe by self help hubbing

Number Of stopover	Joint alliances	One World	SkyTeam	Star	Network	% operated by alliances
1	9,532	1,989	3,150	4,444	37,986	25.1%



## early analysis on LCC transfer potential

### ▪ Limits of our analysis

- ✓ Intra EU focus
- ✓ No check about airport substitution (each airport represented a distinct node in the network analysed)
- ✓ No check about bi-directionality
- ✓ Minimum travel time were the only criteria considered

### ▪ Limits of LCC transfer in the 2000s

- ✓ Few interconnections at airports with intercontinental flights
- ✓ Directionality of the opportunities (90% of them did not have feasible scheduling for the trip back) due to low frequency
- ✓ Opportunities were difficult to be retrieved by passengers (How to check which intermediate airport can be feasible for self-help hubbing?)
- ✓ Not favoured by companies



## Evolution of the European Aviation Framework

- Since the economic crisis LCCs have moved increasingly toward primary airports

Airport	Pax 2015 (mln)	2004		2010		2014	
		LCC	FR and U2	LCC	FR and U2	LCC	FR and U2
London Heathrow	75.0	0%	0%	0%	0%	2%	0%
Paris Charles De Gaulle	65.8	3%	2%	8%	6%	9%	6%
Frankfurt	61.0	5%	0%	7%	0%	6%	0%
Amsterdam-Schiphol	58.3	13%	5%	15%	6%	17%	7%
Madrid Barajas	46.8	3%	1%	20%	16%	19%	13%
Munich F.J. Strauss	41.0	16%	1%	18%	1%	15%	1%
Roma Fiumicino	40.4	5%	0%	14%	5%	24%	12%
London Gatwick	40.3	26%	17%	54%	41%	66%	49%
Barcelona	39.7	13%	5%	45%	10%	67%	20%
Paris Orly	29.7	7%	5%	17%	10%	22%	10%
Copenhagen	26.6	10%	2%	18%	4%	27%	5%
Zurich	26.3	10%	1%	10%	1%	12%	1%
Dublin	25.0	40%	32%	46%	42%	43%	40%
Oslo	24.7	26%	0%	43%	0%	43%	0%
Brussels National	23.5	15%	0%	7%	4%	15%	10%
Stockholm-Arlanda	23.1	12%	0%	19%	1%	29%	0%
Manchester	23.1	19%	2%	40%	9%	56%	25%
Vienna	22.8	11%	0%	12%	1%	12%	1%
London Stansted	22.5	96%	88%	96%	90%	98%	95%
Dusseldorf	22.5	34%	0%	44%	1%	53%	1%
Milano Malpensa	18.6	2%	0%	33%	26%	43%	34%



## Evolution of the European Aviation Framework

- LCCs increased their presences on primary airports
  - ✓ Often in dedicated terminals
  - ✓ Still not substantial in the first 3-4 airports
- LCCs' hybridization process
  - ✓ New LCCs' services target business passenger (seat reservation, data flexibility)
  - ✓ LCCs' entering in codesharing agreements (Morandi et. Al.2014)
- New airlines group where LCC can potentially work as feeder
  - ✓ Vueling in IAG
  - ✓ Air berlin in the Ethiad hemisphere
  - ✓ ....



# Evolution of the European Aviation Framework

- LCCs' hybridization and hubbing

Time consuming process, making Ryanair reluctant to guarantee its connections

Mr O'Leary's priorities are changing.

The idea is to woo more business travellers.

Business travellers will not be the only beneficiaries. Search for flights from Marrakech to Edinburgh, for example, on Ryanair.com and the booking engine comes up blank. Most comparison websites follow suit, instead suggesting expensive over-night connections via Madrid (with full-service Iberia) or London Gatwick (with full-service British Airways). It is only by breaking up the journey into two stages—Marrakech to London, and London to Edinburgh—that Ryanair and Stansted emerge as the clear first choice, offering cheap transfers with a short layover.

The Economist

Gulliver  
Business travel

Secret connections

## Ryanair experiments with hub-and-spoke transfers

Apr 20th 2016, 13:29 by M.R.

THREE years ago, taking just one flight with Ryanair would be enough to send a shiver down the spine of a European business traveller. The prospect of back-to-back flights with the airline—planning your own connections with no insurance against delays—was positively harrowing. A lot can change in three years.



Michael O'Leary, Ryanair's chief executive, recently [told](http://www.independent.ie/business/irish/ryanair-will-trial-transfer-traffic-from-this-summer-34624914.html) (http://www.independent.ie/business/irish/ryanair-will-trial-transfer-traffic-from-this-summer-34624914.html) the *Irish Independent* that the low-cost carrier, Europe's largest,

El Prat. The  
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onward bookings



## Evolution of the European Aviation Framework

- Interconnections are much easier to be found thanks to new IT technologies
  - ✓ Nowadays web-search engines can recognize new opportunities of self connecting flights!!
  - ✓ Including ground transportation
  - ✓ Ranked or filtered by several specific need (cost, time, etc...)
  
- New long haul smaller aircrafts increase the probability to have intercontinental flights departing from non-main hub airports

Airport	Delta direct connection 2004-14 toward North America	Airport	Delta direct connection 2004-14 toward North America
BRU	4	VIE	1
BCN	6	VCE	4
LIS	5	GVA	2
ARN	4	ATH	2
OSL	5	EDI	2





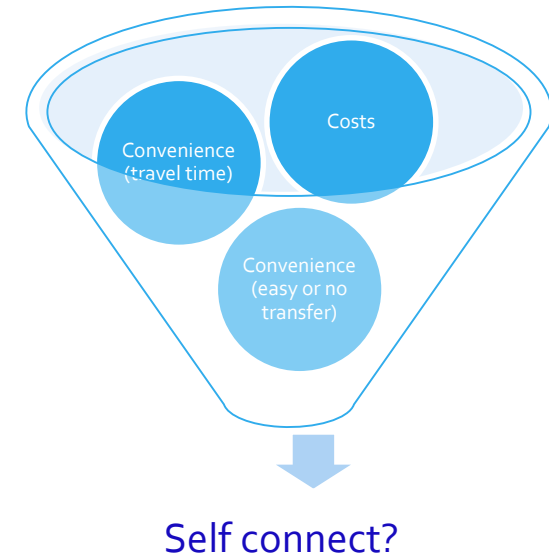
## Evaluation of the current transfer potential

- OAG recent findings (2016)
  - ✓ When saving \$100, only 16 percent of non-millennial travelers are willing to justify a layover of more than four hours, while 28 percent of millennials are willing to wait at least four hours to save that same money.
  - ✓ As savings rise, travellers are more willing to take on longer layovers. In order to save \$200, the number of travellers willing to wait more than four hours more than doubles to 37 percent. For millennials, that number skyrockets to 55 percent
  - ✓ On opposite traveller are willing to pay a premium for more convenience  
*“respondents are willing to pay more for convenience when self-connecting, but not enough to significantly eat into the savings that a self-connecting itinerary would provide”*



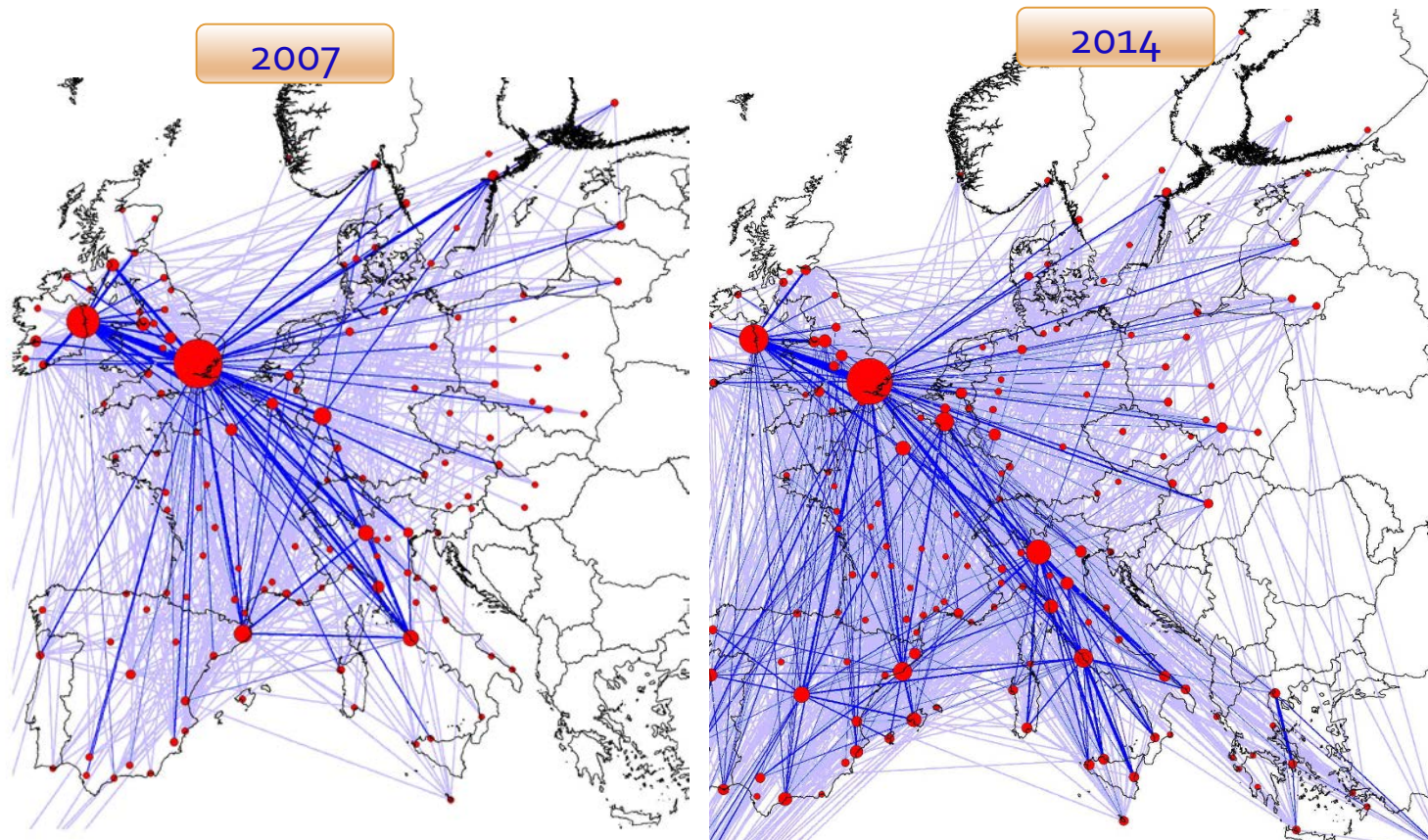
## Evaluation of the current transfer potential

- Delicate balance between time, costs, affordability
  - ✓ Further in Europe secondary airports, in some cases, have their own catchment area (at least some percentage points in term of population served)
- How many interconnection with feasible or convenient travel time exist?
- Which transfer mode will receive greater success?
  - ✓ LCC hubbing
  - ✓ LCC feeder a specific airline alliance
  - ✓ Self help hubbing intra EU
  - ✓ Self help hubbing toward non EU connection



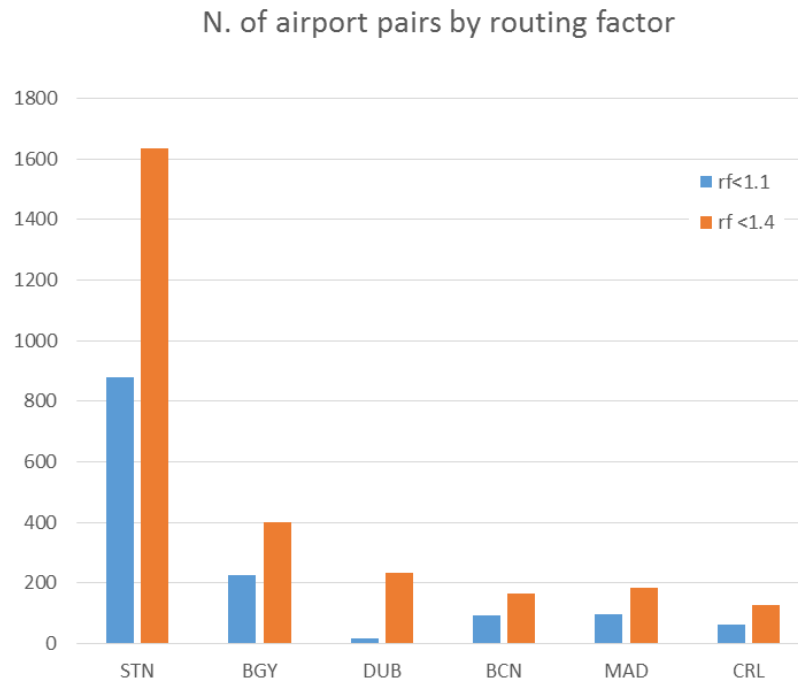
## Some examples (LCC hubbing)

- Ryanair's hubbing
- The size of the network facilitate interconnection



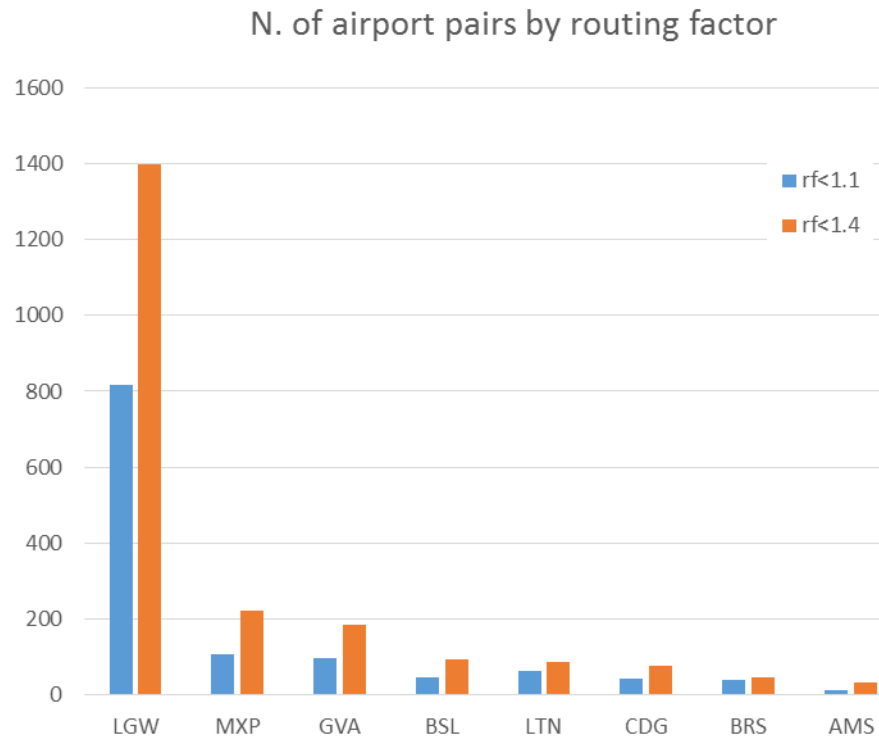
## Some examples (LCC hubbing)

- Ryanair's hubbing
  - ✓ No direct connection among the 2 airports
  - ✓ No other 2 step faster (>10% differences) connection between the 2 airports
  - ✓ No other direct connection among alternative airports (<100 km)



## Some examples (LCC hubbing)

- easyJet' hubbing
  - ✓ No direct connection among the 2 airports
  - ✓ No other 2 step faster (>10% differences) connection between the 2 airports
  - ✓ No other direct connection among alternative airports (<100 km)



## Some example: Interlining LCC – traditional long haul

- Within IAG: Vueling -> Vueling, British and Iberia Flights
  - ✓ Indirect connection where no direct connection exist
  - ✓ No other 2 step faster connection among the 2 airports
  - ✓ No other direct connection among alternative airports (<100 km)

Hub	<1,05	1.1	1.2	1.3	1.4	1.5	Overall <2
BCN	206	613	319	217	120	70	1824
MAD	43	103	30	18	35	50	324
LHR	4	55	58	32	23	13	196
FCO	6	21	39	20	7	8	141
LGW	1	33	12	5	1	17	83
PMI	14	7	12	4	4	7	49



## Some example (full airport interlining)

- All feasible interconnection with final destination outside EU1 area with LCC involved in one leg at least
  - ✓ 1h minimum connecting, no direct connection, no other faster direct connection, no direct connection with alternative airports within airlines
  - ✓ Further restriction: only to <1.1 routing and equivalent speed (accounting also for waiting time) >400 km/h

	AF	AS	LA	ME	NA	overall	
CDG		60	243	92	10	68	473
AMS		29	232	61	15	75	412
MAD			6	214	7	13	240
LHR		15	35	26		137	213
MUC		10	116	8	8	6	148
LGW				46	9	78	133
FRA		4	91	15		18	128
FCO		1	42	40	10	15	108
DUS			54	7	6	29	96
BCN			2	39	21	17	79





# Summary





## New Intra EU transfer(1/3)

- Interconnections currently unmanaged by the airlines are theoretically significant in size and also in term of value provided to passenger
- They represent an option that, thanks to recent development, nowadays is more realistically exploitable
- In some airports, hundreds of interconnections that may improve services in term of travel time between airports currently bad connected exist
- These options are able to interconnect most likely unusual destination pairs ( particularly those without enough demand for direct connection?)
- It is a way for serving the tails of the demand distribution (in term of O-D)
- It is way for adding some percentage points to existing direct flight
- Exploring new efficient interlining options



## New Intra EU transfer (2/3)

- About business model in which LCC facilitating/start hubbing activity

### Pro

- ✓ Main LCCs can take advantage of their intra European network which is the most developed
- ✓ Information can be offered directly by the LCC web page
- ✓ Special operation can be set up by the company in order to treat this passenger

### Cons

- ✓ On intra European routes LCCs and the traditional business model are going to be even more undistinguishable
- ✓ How to avoid increasing cost of complexity
- ✓ Like for traditional business model some direct connection may be replaced by indirect connection



## New Intra EU transfer (3/3)

- Self help hubbing (with different airlines, LCC or traditional)

### PRO

- ✓ Exploit option that already exist in the network and that can be easily found thanks to new IT technologies
- ✓ Passenger empowerment (Passenger take themselves the best choice)

### Cons

- ✓ Do airlines really want to facilitate interlining ?
- ✓ If interconnections are not efficient and seamless it will remain difficult to fully exploit these opportunities



## New transfer toward non EU

- We considered the extension of LCC –LCC or LCC –traditional as the new option (even if also two unallied carrier can be considered in self connection)
- (In term of competitive travel time) at main airports hundreds of options can be added to traditional hub and spoke network
- This new options are made available thank to the increasing presence of LCC also at the main hubs
- Airlines group/Alliances may increase their willingness to accept and interconnect feeder traffic from LCC
- Self connected paths toward extra EU destinations can be more expensive rather than cheaper (due to double marginality, direct connection)



# Airport and Airline opportunities

## ▪ Airlines

- ✓ Self connection is an opportunity that can revolutionize (again) the airlines' business model. It poses question about future of code sharing agreements and traditional hubbing activities. Further it can exacerbates indirect competition further lowering fares on feeder/point to point routes.

## ▪ Airports

- ✓ They can potentially gain passengers that do not come from their catchment areas without the cost complexity of the hub structure
- ✓ Most likely they have more incentive to favour self connection compared to airlines



# What airports and airlines can do

- Airlines
  - ✓ Standardize and further simplify procedures
  - ✓ Monitor self connected routes and adjust-optimize scheduling
  
- Airports
  - ✓ Services that can manage multi-airline operation (self baggage check in , self kiosk)
  - ✓ Small-medium airport can facilitate interconnection by taking advantages of the simple and uncongested environment
  
- Third parties
  - ✓ Manage the overall door to door trip
  - ✓ Provide assurance and services in case of delays/missing flight etc (hotel cost cover, automate rebooking procedures, alternative routes path, etc..)



## Ryanair interconnection of bigger airport

hub	depart	arrival	overall travel time
STN	MAD	GOT	5.17
STN	MAD	NYO	5.33
STN	NYO	MAD	5.42
BVA	MAD	NYO	5.42
STN	ATH	DUB	3.83
CGN	CPH	TFS	6.42
LTN	TFS	CPH	8.25
BGY	IBZ	CPH	4.75
MAD	RAK	CPH	6.83
MAD	FUE	CPH	7.67
STN	BLQ	DUB	3.17
VLC	IBZ	DUB	3.50
BCN	IBZ	DUB	3.75
CRL	BUD	MAN	3.58
STN	ATH	EDI	3.75
BGY	PMO	DUB	4.25
STN	PSA	DUB	3.50
BRS	MLA	DUB	5.67
GRO	MLA	DUB	4.67
LTN	MLA	DUB	4.67
MAD	DUB	RAK	5.67
BGY	CAG	DUB	4.00
LPL	VNO	DUB	3.08
BGY	BDS	DUB	3.92
STN	BDS	DUB	4.33
STN	ATH	GLA	4.25
STN	KTW	DUB	3.50
BRS	CHQ	DUB	4.50

## EasyJet: interconnection of bigger airport

hub	depart	arrival	overall travel time
MRS	FCO	MAN	3.2
BSL	FCO	MAN	3.4
BSL	TLV	LGW	5.6
BSL	FCO	LTN	3.2
LGW	FCO	EDI	4.2
MXP	FCO	EDI	3.3
AMS	FCO	EDI	4.5
LTN	MAD	GLA	3.8
LGW	FCO	GLA	3.9
BRS	BCN	GLA	3.3
MXP	LCA	CDG	5.8
LGW	ACE	AMS	0.5
LGW	AMS	ACE	5.4
LGW	LPA	CPH	0.9
LGW	PMI	EDI	3.5
LGW	DME	LPA	7.6
LGW	AMS	FUE	5.5
LGW	FUE	AMS	0.4
HAM	ATH	EDI	3.8
GVA	FCO	KEF	7.4
MXP	CPH	CTA	4.7
LGW	FCO	BFS	4.3
MAN	CPH	TFS	6.4
LGW	MAD	ABZ	3.7
LGW	MXP	GLA	3.0
CDG	MXP	GLA	3.3
LGW	DME	FAO	5.8
LGW	GVA	GLA	2.5

