

making the difference

FABEC VFE Workshop

7 December 2021

Operational trials at FABEC ANSPs

Brussels / skeyes and On-line

JM Edard

tare a state and state the set all and

Agenda

- 1. DFS Procedure phase C
- 2. DSNA / skyguide Dynamic RAD
- 3. MUAC Pre-flight check







DFS

DFS Procedures of Phase C ARR EDDM



making the difference

a the same and the second prover the

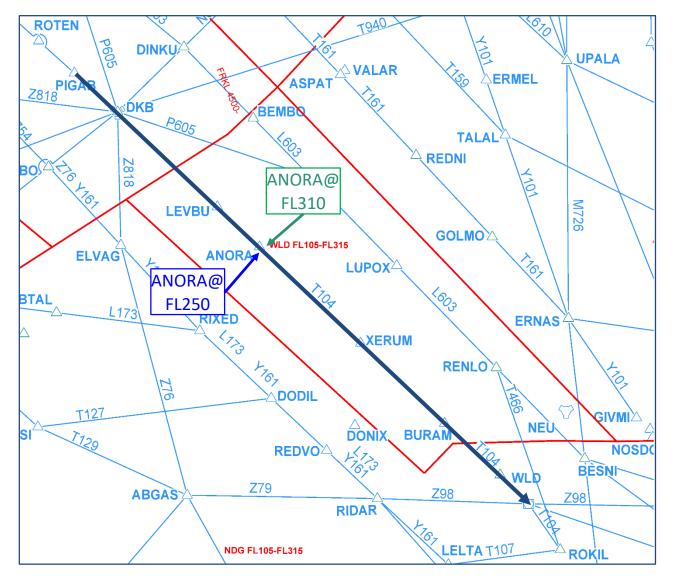
General Description of Procedure / Phase C

Phase C is the generic term for procedures established during low traffic periods within ACC Munich, but also with external partners

Phase C means always higher transfer conditions as defined as the standard transfer conditions for aircraft arriving to and departing from specific airports

making the difference

Example 1: ARR EDDM via DKB T104



Standard Transfer: Descending FL250 (out of FL310), to cross ANORA at FL250

Phase C:

Descending FL310, to cross ANORA at FL310

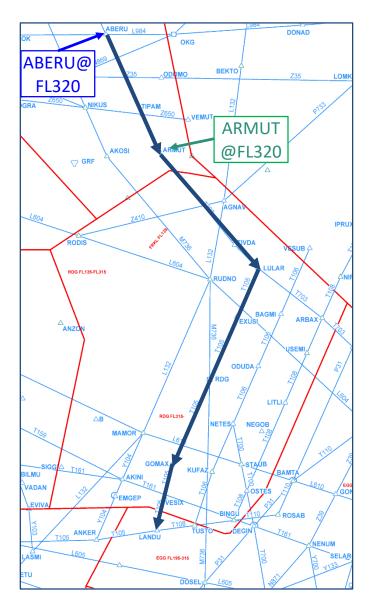
13 kg saved fuel per flight (Simulation week
1st of August to 7th of August 2021)

	Scenario E	conomy for	. (Potential ga	ains/losses)	
Total impacted flights	Length (NM)	Time (min)	Fuel (kg)	CO2 (kg)	NOx (kg)
311	-0,070	-45,466	-4005,442	-12659,133	-73,461



Example 2: ARR EDDM via ABERU ARMUT T107





Standard Transfer: ABERU at FL320

Phase C: ARMUT at FL320,

14 kg saved fuel per flight (Simulation week
1st of August to 7th of August 2021)

	Scenario E	Economy for	. (Potential ga	ins/losses)	
Total impacted flights	Length (NM)	Time (min)	Fuel (kg)	CO <mark>2 (</mark> kg)	NOx (kg)
76	0,002	3,391	-1059,456	-3348,190	-21,165



Procedure phase C / Benefit assessment

Considering that 1 flight out of 4 could benefit from the procedure phase C

Annual benefits could be envisaged around 65 tonnes of saved fuel, corresponding to 205 tonnes of CO2





Dynamic RAD



Dynamic RAD / Goal

Introduce more flexibility in the management of RAD restrictions

Promote flight efficiency, avoiding unnecessary traffic constrains in case of sustainable demand



Dynamic RAD / Schedule

		U	UP			
ANSPs	AUP	D-1	D-OPS	START	END	Remark
		P2 P3	P2 P3			
DSNA	x			12/08/2021	03/11/2021	DSNA planned to stop in November with the current RAD restrictions and restart with new selected RAD restrictions on the 27 th of January (AIRAC 2201 (487) for a time period TBD
ENAV	Х			07/10/2021	01/12/2021	
SKYGUIDE	Х			07/10/2021	01/12/2021	
ENAIRE	Х			12/08/2021	01/12/2021	
NATS	х			TBD	TBD	NATS evaluating the possibility to launch a live trial beginning 2022
IAA	Х			TBD	TBD	As above

Dynamic RAD / AUP

Dynamic RAD Trials – French Publication (Sunday)

						Re	Valid Valid	VEF 22/08/202 I TIL 23/08/202 I On 21/08/202	21 06:00
	1	ATS Route a	nd CDR Typ	e 1 Closu	re	CDR T	ype 2	Availability	RSA Allocations
R	SA	NOTAN	REMARK	MNM FL	MAX FL	WEF	UNT	FUA/EU RS	
LE	ER71A			010	100	05:30	06:00		
LE	ER71B			010	240	05:30	06:00		
	ER71C			020		05:30			
LF	FR169			000	100	04:00	06:00		
11	ER34A2			065	195	06:00	06:00		
U	FTZ350	3		000	005	09:00	13:00	LFTZ3503X	
LI	FTZ403	3		000	005	04:00	06:00	LFTZ4033X	
U	FTZ403	3		000	005	06:00	20:00	LFTZ4033X	
U	FTZ413	20		000	005	06:00	20:00	LFTZ4132UX	
	FTZ413			000				LFTZ4132UX	
	FTZ417	Th		000				LFTZ4175X	
	FTZ417			000				LFTZ4175X	
	FTZ423			000				LFTZ4234X	
	FTZ423			000				LFTZ4234X	
	FTZ439			000				LFTZ4397X	
	FTZ439			000				LFTZ4397X	NAMES OF CONTRACTOR OF CONT
	FTZ522	8		000	005	22:00	05:00	LFTZ5228X, 1	LFTZ5228Y
	GD100			000		00.00			
	GD61			000		06:00			
	GD63			000		06:00			
	GD64			000		06:00	1.0.0		
	GD65			000		06:00			
	GD68			000		06:00			
	GD69			000		06:00			
	GD71			000		06:00			
	GD72A			075		06:00			

NETWORK MANAGER USER WEEK 2021



Supporting European Aviation

CONTRACTOR OF TRACE PROPERTY AND

• 💥 🛊 🎲 🔹 🙆

Dynamic RAD

LF3503 - AIRAC 2108

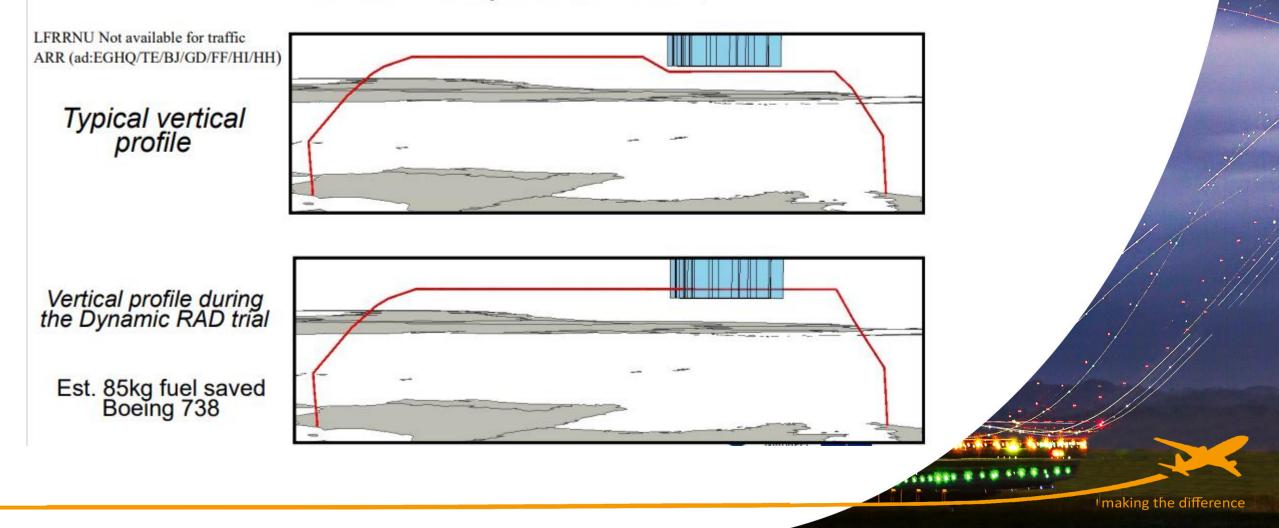
- Total potential (if RAD is disabled H24): 515 flights
- 164 flights (32%) filed via LFRRNU
- Fuel savings potential: 43 t
- Saved fuel: 14 t

AL_EGHH I </th <th>AL_EGHH I I 7 I 7 AL_EGHI 1 I I 7 I 2 AL_EGHQ I I I I 7 I 2 AL_EGHQ I I I I I 2 I 2 AL_EGGD I I I I I I I I I I AL_EGGD II III IIII IIIIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII</th> <th>AL_EGHH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</th> <th>AL_EGHH I<!--</th--><th></th><th>AHO</th><th>CFE</th><th>CLF</th><th>EXS</th><th>EZY</th><th>GKY</th><th>IXR</th><th>MAL</th><th>NJE</th><th>RYR</th><th>SVW</th><th>TOM</th><th>vvv</th><th>ZZZ</th><th>CP tota</th></th>	AL_EGHH I I 7 I 7 AL_EGHI 1 I I 7 I 2 AL_EGHQ I I I I 7 I 2 AL_EGHQ I I I I I 2 I 2 AL_EGGD I I I I I I I I I I AL_EGGD II III IIII IIIIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	AL_EGHH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AL_EGHH I </th <th></th> <th>AHO</th> <th>CFE</th> <th>CLF</th> <th>EXS</th> <th>EZY</th> <th>GKY</th> <th>IXR</th> <th>MAL</th> <th>NJE</th> <th>RYR</th> <th>SVW</th> <th>TOM</th> <th>vvv</th> <th>ZZZ</th> <th>CP tota</th>		AHO	CFE	CLF	EXS	EZY	GKY	IXR	MAL	NJE	RYR	SVW	TOM	vvv	ZZZ	CP tota
EAL EGHI 1 1 1 1 1 2 EAL_EGHQ 7 7 7 7 7 EAL_EGTE 1 2 2 2 EBL_EGGD 5 1 1 1 1 EGE_EGGD 1 1 6 6 6 EGE_EGGD 1 5 1 4 2 13 EGE_EGGD 1 5 1 4 2 13 EIB_EGGD 1 5 1 4 2 13 EIB_EGGD 1 5 1 4 2 13 EIB_EGGHI 1 1 1 1 12 EIMG_EGHH 1 1 11 12 14 14 EMG_EGHH 1 1 11 12 14 14 EMG_EGHH 1 1 11 12 14 14 EMG_EGHH 1 1 11 12 14 14 14 16 12 12	EAL EGHI 1 1 1 1 2 2 EAL_EGHQ 5 2 2 2 2 EBL_EGGD 5 1 1 1 1 1 EBL_EGGD 5 1 6 6 6 EBL_EGGD 1 1 1 1 1 EGE_EGGD 1 5 1 4 2 13 EGE_EGGD 1 5 1 4 2 13 EIB_EGGD 1 5 1 4 2 13 EIB_EGGD 1 5 1 1 1 12 EIB_EGGHI 1 1 1 1 12 13 EIB_EGGHI 1 1 1 1 12 14 14 EIMG_EGHH 1 1 1 12 13 12 14 EMG_EGHH 1 1 11 12 1 12 14 EMG_EGHH 1 1 1 14 1	EAL EGHI 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	EAL EGHI 1 1 7 2 EAL_EGHQ 5 2 2 EBL_EGTE 2 2 EBL_EGTE 1 1 1 EGE_EGGD 5 1 1 EGE_EGGD 6 6 6 EGE_EGHH 2 2 EIB_EGGD 1 5 2 EIB_EGGD 1 4 2 2 EIB_EGGD 1 1 1 1 EIB_EGGD 1 5 1 1 1 EIB_EGGD 1 5 1 1 1 EIB_EGGD 1 1 1 1 1 EMG_EGHH 1 1 1 1 1 EMI_EGGD 2 6 6 6 EPA_EGGD 2 6 1 1 EPA_EGHH 1 1 1 1 1 EPA_EGHI 1 1 1 1 1 1 EVC_EGGD 2 2	AL_EGGD					1					14					1
LEAL_EGHQ I I I I 7 I 7 LEAL_EGTE I I I 2 I 2 LEBL_EGGD I I I I I I I LEGE_EGGD I I I I I I I I LEGE_EGGD I I I I I I I I I I LEIB_EGGD I S I<	LEAL_EGHQ	LEAL_EGHQ 1 7 7 LEAL_EGTE 1 2 2 LEBL_EGGD 5 1 1 LEGE_EGGD 6 6 LEGE_EGGD 1 6 6 LEGE_EGGD 1 6 6 LEGE_EGGD 1 1 1 LEB_EGGD 1 5 1 6 LEB_EGGD 1 5 1 4 2 13 LEB_EGGH 1 1 1 1 1 1 LEB_EGHH 1 1 1 1 1 1 LER_EGHH 1 1 1 1 1 1 1 LER_EGGD 2 6 6 6 6 6 LEPA_EGGD 2 6 6 6 6 6 LEPA_EGGD 2 3 3 3 1 1 LEPA_EGGD 2 2 2 2 2 2 LEPA_EGGD 3 3 3 <td< td=""><td>LEAL_EGHQ 7 7 7 LEAL_EGTE 1 2 2 LEBL_EGTE 1 1 1 LEBL_EGTE 1 6 6 LEBL_EGTE 1 6 6 LEGE_EGGD 5 1 14 LEGE_EGGH 2 2 2 LEB_EGGT 1 4 2 LEB_EGGD 1 5 1 4 LEB_EGGH 1 1 1 1 LEB_EGHI 1 1 1 1 LEB_EGHI 1 1 1 1 LEM_EGGD 1 1 1 1 LEMG_EGHH 1 1 1 1 LEMG_EGHH 1 1 1 1 LEM_EGGD 2 1 1 1 LEPA_EGHH 1 1 1 1 LEPA_EGHH 1 1 1 1 LEPA_EGHI 1 1 1 1 LEPA_EGHI 1<td>AL_EGHH</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>7</td><td></td><td></td><td></td><td></td><td>1</td></td></td<>	LEAL_EGHQ 7 7 7 LEAL_EGTE 1 2 2 LEBL_EGTE 1 1 1 LEBL_EGTE 1 6 6 LEBL_EGTE 1 6 6 LEGE_EGGD 5 1 14 LEGE_EGGH 2 2 2 LEB_EGGT 1 4 2 LEB_EGGD 1 5 1 4 LEB_EGGH 1 1 1 1 LEB_EGHI 1 1 1 1 LEB_EGHI 1 1 1 1 LEM_EGGD 1 1 1 1 LEMG_EGHH 1 1 1 1 LEMG_EGHH 1 1 1 1 LEM_EGGD 2 1 1 1 LEPA_EGHH 1 1 1 1 LEPA_EGHH 1 1 1 1 LEPA_EGHI 1 1 1 1 LEPA_EGHI 1 <td>AL_EGHH</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td>1</td>	AL_EGHH										7					1
LEAL_EGTE I I I I 2 I 2 LEBL_EGGD I S I	LEAL_EGTE I I I 2 I 2 LEBL_EGGD 5 I I I I I I LEGE_EGGD I I I I I I I I LEGE_EGGD I I I I I I I I I I LEGE_EGGD I 5 I	LEAL_EGTE 1 2 2 LEBL_EGGD 5 1 1 LEGE_EGGD 6 6 LEGE_EGHH 2 2 LEGE_EGHH 2 1 LEGE_EGHH 2 1 LEGE_EGHH 2 1 LEGE_EGHH 2 1 LEGE_EGHH 1 14 LEGE_EGHH 1 1 LEB_EGGD 1 5 LEIB_EGGD 1 5 LEIB_EGHH 1 1 LEMG_EGHH 1 1 LEMG_EGHH 1 1 LEMG_EGHH 1 1 LEMG_EGHH 1 1 LEMA_EGGD 2 2 LEPA_EGTE 1 1 LEPA_EGTE 1	LEAL_EGTE 2 2 2 LEBL_EGGD 5 1 1 LEGE_EGGD 6 6 LEGE_EGHH 2 2 LEB_EGGD 1 6 LEGE_EGHH 2 1 LEGE_EGHH 1 14 LEGE_EGHH 2 2 LEB_EGGD 1 5 LEB_EGGD 1 5 LEB_EGGD 1 1 LEM_EGHH 1 11 LEMG_EGHH 1 1 LEMG_EGHH 1 11 LEMA_EGGD 2 2 LEMA_EGGD 2 2 LEPA_EGGH 1 1 LEPA_EGGH 1 1 LEPA_EGGD 2 2 LEPA_EGGD 2 2 LEPA_EGGD 1 2 LEPA_EGGD 1 1 LEPA_EGGD 1 1 LEVC_EGGD 1 1 LIMMLEGHH 1 1 LIMMLEGHH 1	AL EGHI	1	1													1
LEBL_EGGD 5 5 5 1 1 1 LEGE_EGGD 1 6 6 6 6 LEGE_EGGD 1 14 14 14 LEGE_EGHH 2 1 14 14 LEGE_EGHH 2 1 14 2 LEB_EGGD 1 5 1 4 2 LEB_EGGD 1 5 1 4 2 13 LEB_EGHI 1 1 1 1 1 2 LEIB_EGHI 1 1 1 1 1 1 1 LEMG_EGHH 1 1 1 11 1 1 1 LEMG_EGHH 1 1 1 1 1 1 1 1 LEMA_EGGD 2 - - 2 <td>LEBL_EGGD 5 1 1 1 LEGE_EGGD 1 6 6 6 LEGE_EGGD 1 14 14 14 LEGE_EGHH 2 1 14 14 LEGE_EGHH 2 1 14 14 LEGE_EGHH 2 1 4 2 13 LEB_EGGD 1 5 1 4 2 13 LEB_EGHI 1 1 1 1 12 2 LEIB_EGHI 1 1 1 1 12 2 LEIB_EGHI 1 1 1 11 12 2 LEIR_EGHI 1 1 11 11 12 11 12 LEMG_EGHH 1 1 14 6 129 2</td> <td>LEBL_EGGD 5 1 5 1 1 LEGE_EGGD 1 1 6 6 6 LEGE_EGHH 2 1 6 6 6 LEB_EGGD 1 5 1 4 2 13 LEB_EGGD 1 5 1 4 2 13 LEB_EGGD 1 5 1 4 2 13 LEB_EGHI 1 1 1 1 12 12 LEB_EGHI 1 1 1 11 12 12 LEB_EGHI 1 1 11 12 12 13 LEB_EGHI 1 1 11 12 12 12 LEM_EGGD 2 2 2 2 2 2 2 LEPA_EGHI 1 1 14 6 129 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 <td< td=""><td>LEBL_EGGD 5 1 5 1 1 1 LEGE_EGGD 1 6 6 6 6 6 LEGE_EGGH 2 1 14 14 14 LEB_EGGD 1 5 1 4 2 13 LEB_EGGD 1 5 1 1 1 1 2 LER_EGHH 1 1 1 1 1 2 2 LEM_EGGD 2 0 2 2 2 2 2 LEM_EGGD 1 2 1 1 1 1 1 1 LEPA_EGGD 1 2 1 1 1 1 1 1 LEPA_EGHH 1 1 1 1 1 1 1 1 1</td><td>AL_EGHQ</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>7</td><td></td><td></td><td></td><td></td><td></td></td<></td>	LEBL_EGGD 5 1 1 1 LEGE_EGGD 1 6 6 6 LEGE_EGGD 1 14 14 14 LEGE_EGHH 2 1 14 14 LEGE_EGHH 2 1 14 14 LEGE_EGHH 2 1 4 2 13 LEB_EGGD 1 5 1 4 2 13 LEB_EGHI 1 1 1 1 12 2 LEIB_EGHI 1 1 1 1 12 2 LEIB_EGHI 1 1 1 11 12 2 LEIR_EGHI 1 1 11 11 12 11 12 LEMG_EGHH 1 1 14 6 129 2	LEBL_EGGD 5 1 5 1 1 LEGE_EGGD 1 1 6 6 6 LEGE_EGHH 2 1 6 6 6 LEB_EGGD 1 5 1 4 2 13 LEB_EGGD 1 5 1 4 2 13 LEB_EGGD 1 5 1 4 2 13 LEB_EGHI 1 1 1 1 12 12 LEB_EGHI 1 1 1 11 12 12 LEB_EGHI 1 1 11 12 12 13 LEB_EGHI 1 1 11 12 12 12 LEM_EGGD 2 2 2 2 2 2 2 LEPA_EGHI 1 1 14 6 129 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 <td< td=""><td>LEBL_EGGD 5 1 5 1 1 1 LEGE_EGGD 1 6 6 6 6 6 LEGE_EGGH 2 1 14 14 14 LEB_EGGD 1 5 1 4 2 13 LEB_EGGD 1 5 1 1 1 1 2 LER_EGHH 1 1 1 1 1 2 2 LEM_EGGD 2 0 2 2 2 2 2 LEM_EGGD 1 2 1 1 1 1 1 1 LEPA_EGGD 1 2 1 1 1 1 1 1 LEPA_EGHH 1 1 1 1 1 1 1 1 1</td><td>AL_EGHQ</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>7</td><td></td><td></td><td></td><td></td><td></td></td<>	LEBL_EGGD 5 1 5 1 1 1 LEGE_EGGD 1 6 6 6 6 6 LEGE_EGGH 2 1 14 14 14 LEB_EGGD 1 5 1 4 2 13 LEB_EGGD 1 5 1 1 1 1 2 LER_EGHH 1 1 1 1 1 2 2 LEM_EGGD 2 0 2 2 2 2 2 LEM_EGGD 1 2 1 1 1 1 1 1 LEPA_EGGD 1 2 1 1 1 1 1 1 LEPA_EGHH 1 1 1 1 1 1 1 1 1	AL_EGHQ										7					
LEBL_EGTE I	LEBL_EGTE 1 1 1 1 1 1 1 LEGE_EGGD 1 6 6 6 6 6 LEGE_EGHH 2 14 14 14 14 LEGE_EGHH 2 1 4 2 13 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHH 1 1 1 1 1 1 LEIB_EGHH 1 1 11 11 11 11 LER_EGHH 1 1 11 11 12 11 12 LER_EGHH 1 1 11 11 12 11 12 LEMG_EGGD 2 6 6 6 LEPA_EGGD 1 2 4 1 16 3 1 21 LEPA_EGHH 1 1 1 1 1 1 1 1 1 1 LEPA_EGHH 1 1 1 1 1 1 <td< td=""><td>LEBL_EGTE 1 1 6 1 LEGE_EGGD 1 6 6 6 LEGE_EGHH 2 1 14 14 LEBL_EGGD 1 5 1 4 2 13 LEBL_EGGD 1 5 1 4 2 13 LEBL_EGH 1 1 1 1 2 14 LEBL_EGH 1 1 1 1 1 1 LEBL_EGH 1 1 1 1 1 1 1 LEBL_EGHH 1 1 1 1 1 1 1 1 LEMG_EGHH 1 1 1 1 1 1 1 1 1 1 LEPA_EGGD 1 2 4 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 1 1 LEPA_EGHI 1 1 1 1 1 1 1 1</td><td>LEBL_EGTE 1 1 6 6 LEGE_EGGD 1 14 14 LEGE_EGHH 2 1 14 14 LEBL_EGGD 1 5 1 14 2 LEBL_EGGD 1 5 1 44 2 2 LEBL_EGGD 1 5 1 44 2 1 LEBL_EGGD 1 5 1 1 1 1 LEBL_EGGD 1 5 1 44 2 1 LEBL_EGGD 1 5 1 1 1 1 1 LEML_EGHH 1 1 1 1 1 1 1 LEML_EGHH 1 1 1 1 1 1 1 LEML_EGHH 1 1 1 1 1 1 1 1 LEPA_EGHH 1 1 1 1 1 1 1 1 LEPA_EGHH 1 1 1 1 1 1 <td< td=""><td>AL_EGTE</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td></td><td></td><td>1</td></td<></td></td<>	LEBL_EGTE 1 1 6 1 LEGE_EGGD 1 6 6 6 LEGE_EGHH 2 1 14 14 LEBL_EGGD 1 5 1 4 2 13 LEBL_EGGD 1 5 1 4 2 13 LEBL_EGH 1 1 1 1 2 14 LEBL_EGH 1 1 1 1 1 1 LEBL_EGH 1 1 1 1 1 1 1 LEBL_EGHH 1 1 1 1 1 1 1 1 LEMG_EGHH 1 1 1 1 1 1 1 1 1 1 LEPA_EGGD 1 2 4 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 1 1 LEPA_EGHI 1 1 1 1 1 1 1 1	LEBL_EGTE 1 1 6 6 LEGE_EGGD 1 14 14 LEGE_EGHH 2 1 14 14 LEBL_EGGD 1 5 1 14 2 LEBL_EGGD 1 5 1 44 2 2 LEBL_EGGD 1 5 1 44 2 1 LEBL_EGGD 1 5 1 1 1 1 LEBL_EGGD 1 5 1 44 2 1 LEBL_EGGD 1 5 1 1 1 1 1 LEML_EGHH 1 1 1 1 1 1 1 LEML_EGHH 1 1 1 1 1 1 1 LEML_EGHH 1 1 1 1 1 1 1 1 LEPA_EGHH 1 1 1 1 1 1 1 1 LEPA_EGHH 1 1 1 1 1 1 <td< td=""><td>AL_EGTE</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td></td><td></td><td>1</td></td<>	AL_EGTE										2					1
LEGE EGGD 6 6 6 LEGE EGH 14 14 LEGE 1 5 1 4 2 13 LEIB EGD 1 5 1 4 2 13 LEIB EGD 1 5 1 4 2 13 LEIB EGH 1 1 1 1 1 1 1 LEIB EGHI 1 1 11 11 11 1 1 1 1 LEIR EGHI 1 1 11 11 12 1	LEGE_EGGD 6 6 6 LEGE_EGHH 1 14 14 LEGE_EGHH 2 1 14 14 LEGE_EGHH 2 1 4 2 13 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHH 1 1 1 1 11 12 LEIB_EGHH 1 1 11 11 12 14 14 LEIB_EGHH 1 1 11 11 12 13 11 11 11 12 LEIR_EGHH 1 1 11 11 11 12 11 12 11 12 11 12 11 12 11 12 11 12 11 12 11 12 11 12 11 12 11 12 12 12 11 12 12 12 12 12 12 12 11 12 12 12 12 12 12 12 12 12 12	LEGE_EGGD 6 6 6 6 LEGE_EGHH 2 1 14 14 LEB_EGGD 1 5 1 4 2 13 LEBAGEGHI 1 1 1 12 1 12 LEMG_EGHI 1 1 1 12 12 14 14 14 14 LEMA_EGGD 2 2 2 2 2 2 2 12 12 12 12 14 6 1 29 12 12 12 12 12 12 12 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14	LEGE_EGGD 6 6 6 LEGE_EGHH 2 1 14 14 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 11 12 LER_EGHI 1 1 1 1 12 1 LER_EGHH 1 1 11 12 1 1 LEMG_EGHH 1 1 11 12 1 1 LEM_EGGD 2 0 0 1 1 1 1 LEPA_EGHI 1 16 3 1 21 1 1 1 LEV_EGGD 0 3 0 3 0 3 2 2 2 1 LEV_EGGD 0 1 1 1 1 1 1 1 1 1 LEMU_E	BL_EGGD					5										
LEGE_EGHH 1 1 1 14 14 14 LEGE_EGHI 2 1 5 1 4 2 13 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 2 13 LEIR_EGHI 1 1 1 1 2 13 LEIR_EGHI 1 1 1 1 1 2 LEIR_EGHI 1 1 11 1 1 1 LEMG_EGHH 1 1 11 11 12 1 LEMG_EGGD 2 1 11 12 11 12 LEMI_EGGD 2 1 14 6 122 2 LEPA_EGHH 1 1 14 6 122 2 LEPA_EGHI 1 1 16 3 121 1 LEPA_EGHI 1 2 2 2 2 2 LEPA_EGHI 2 2 2	LEGE_EGHH 1 1 14 14 14 LEGE_EGHI 2 1 5 1 4 2 13 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 2 13 LEIB_EGHI 1 1 1 1 12 13 LEIR_EGHI 1 1 1 1 12 13 LEIR_EGHI 1 1 11 11 12 14 LEMG_EGHH 1 1 11 11 12 14 LEMG_EGHH 1 1 11 11 12 11 LEMM_EGGD 2 2 2 2 2 2 LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGHI 1 1 1 16 3 1 21 LEPA_EGHI 1 2 2 2 2 2 2 LEPA_EGHI <t< td=""><td>LEGE_EGHH 14 14 14 LEGE_EGHI 2 1 4 2 13 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 12 12 LEIR_EGHI 1 1 11 11 12 12 LEMG_EGHH 1 1 11 12 12 12 LEMG_EGHH 1 1 11 12 12 12 LEMG_EGHH 1 1 11 12 12 12 LEMG_EGD 2 0 22 0 22 22 22 LEM_EGGD 1 2 4 1 16 3 121 LEPA_EGGD 1 2 1 1 11 121 121 LEPA_EGHI 1 2 2 2 2 2 2 LEPA_EGD 1 1 1 1 11 11 11 LEVC_EGDI 1 1 1</td><td>LEGE_EGHH 1 14 14 LEGE_EGHH 2 1 1 2 LEB_EGGD 1 5 1 4 2 13 LEB_EGGH 1 1 1 1 2 13 LEB_EGHH 1 1 1 1 2 13 LEMS_EGHH 1 1 1 1 12 2 LEMS_EGHH 1 1 11 12 2 14 14 LEMS_EGHH 1 1 11 12 1 12 2</td><td>BL_EGTE</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>:</td></t<>	LEGE_EGHH 14 14 14 LEGE_EGHI 2 1 4 2 13 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 12 12 LEIR_EGHI 1 1 11 11 12 12 LEMG_EGHH 1 1 11 12 12 12 LEMG_EGHH 1 1 11 12 12 12 LEMG_EGHH 1 1 11 12 12 12 LEMG_EGD 2 0 22 0 22 22 22 LEM_EGGD 1 2 4 1 16 3 121 LEPA_EGGD 1 2 1 1 11 121 121 LEPA_EGHI 1 2 2 2 2 2 2 LEPA_EGD 1 1 1 1 11 11 11 LEVC_EGDI 1 1 1	LEGE_EGHH 1 14 14 LEGE_EGHH 2 1 1 2 LEB_EGGD 1 5 1 4 2 13 LEB_EGGH 1 1 1 1 2 13 LEB_EGHH 1 1 1 1 2 13 LEMS_EGHH 1 1 1 1 12 2 LEMS_EGHH 1 1 11 12 2 14 14 LEMS_EGHH 1 1 11 12 1 12 2	BL_EGTE							1								:
LEGE_EGHI 2 0 0 0 0 2 13 LEIB_EGGD 1 5 1 0 1 2 13 LEIB_EGHI 1 1 1 1 1 12 12 LEIR_EGHI 1 1 1 1 1 11 12 13 LEIR_EGHI 1 1 1 11 1 11 11 12 LEMG_EGHH 1 1 11 11 11 12 12 LEMG_EGGD 2 0 0 1 12 12 12 LEMG_EGGD 2 0 0 1 12 12 12 LEMM_EGGD 2 0 0 1 14 6 1 29 LEPA_EGHI 1 0 1 14 1 1 1 1 1 1 LEPA_EGHI 1 0 1 1 1 1 1 1 1 LEPA_EGHI 1 0 0<	LEGE_EGHI 2 1 1 2 1 1 2 13 LEIB_EGGD 1 5 1 1 4 2 13 LEIB_EGHI 1 1 1 1 1 12 12 LEIR_EGHI 1 1 1 1 1 12 13 LEIR_EGHI 1 1 1 1 11 12 12 LEMG_EGHH 1 1 11 11 11 12 12 LEMG_EGGD 2 1 11 11 12 12 LEMG_EGGD 2 1 14 6 1 29 LEM_EGGD 2 4 1 14 6 1 29 LEPA_EGGD 1 2 4 1 14 1 1 1 LEPA_EGHI 1 1 1 1 1 1 1 1 LEPA_EGHI 1 1 1 1 1 1 1 1 LEP	LEGE_EGHI 2 1 1 1 2 1 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 1 1 LEIB_EGHI 1 1 1 1 1 1 LEM_EGGHI 1 1 11 11 12 LEM_EGGD 2 4 1 11 12 LEM_EGGD 2 6 6 6 LEPA_EGGD 1 2 1 14 6 29 LEPA_EGD1 2 4 1 16 3 121 LEPA_EGD1 1 1 14 6 29 29 LEPA_EGHI 1 1 14 6 29 21 11 LEVC_EGGD 1 1 1 14 11 11 11 LEFM_EGHI 1 2 2 2 2 2 2 LEFM_EGHI 1 1 1 1 11 11<	LEGE_EGHI 2 1 4 2 13 LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 1 1 LEIR_EGHI 1 1 1 1 1 1 LEM_EGHI 1 1 11 12 1 1 LEM_EGHI 1 1 11 12 1 1 12 LEM_EGHI 1 1 11 12 1 12 1 12 LEM_EGHH 6 6 6 6 6 6 6 6 LEPA_EGGD 1 2 1 14 6 129 12 LEPA_EGHI 1 1 1 1 1 1 1 1 LEV_EGD 1 2 2 2 2 2 2 2 LEV_EGD 1 1 3 11 1 1 1 1 1 LEV_C_EGD 1 1	GE_EGGD										6					
LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 2 LEIR_EGHI 1 1 1 1 1 1 LEIR_EGHI 1 1 11 11 11 11 LEMG_EGHH 1 1 11 11 12 12 LEMG_EGHH 1 1 11 11 12 12 LEMG_EGHH 1 2 0 0 22 0 0 22 LEMI_EGGD 2 0 0 22 0 0 22 LEMI_EGHH 0 2 0 0 22 0 22 LEMA_EGGD 1 2 1 14 6 1 29 LEPA_EGHI 1 1 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 1 1 LEVC_EGGD 0 1 1 1 1 1	LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 2 LEIR_EGHI 1 1 1 1 1 LEIR_EGHI 1 1 11 11 11 LEMG_EGHH 1 1 11 11 12 LEMG_EGHH 1 1 11 11 12 LEMG_EGHH 1 2 0 1 12 LEMM_EGGD 2 0 0 2 0 2 LEMI_EGGD 2 0 0 2 0 2 LEMI_EGGD 2 0 0 2 0 2 LEPA_EGGD 1 2 1 14 6 1 29 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 LEVC_EGGD 0 1 2 0 2 2 2 2 2 2	LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 1 1 LEIR_EGHI 1 1 1 1 1 1 LEMG_EGHH 1 1 11 11 12 LEMG_EGHH 1 1 11 11 12 LEMG_EGHH 1 1 11 12 1 LEMG_EGHH 1 6 6 6 LEPA_EGGD 2 1 14 6 29 LEPA_EGHH 1 16 3 121 LEPA_EGHI 1 16 3 121 LEPA_EGGD 1 1 1 1 1 LEPA_EGGD 1 1 1 1 1 1 LEPA_EGGD 1 1 1 1 1 1 1 LEPA_EGGD 1 1 1 1 1 1 1 1 LEPA_EGHH 1 1 1 1 <	LEIB_EGGD 1 5 1 4 2 13 LEIB_EGHI 1 1 1 1 1 1 LEIB_EGHI 1 1 11 11 1 1 LEIR_EGHI 1 1 11 11 11 11 LEMG_EGHH 1 1 11 11 12 LEMG_EGHH 1 1 11 11 12 LEMG_EGD 2 0 6 6 6 LEPA_EGGD 1 2 0 1 1 LEPA_EGHI 1 16 3 1 21 LEPA_EGGD 1 1 1 1 1 1 LEVC_EGGD 1 1 1 1 1 1 1 LEVC_EGHI 1 2 2 2 2 2 LFBE_EGHI 1 1 1 1 1 1 1 LEVC_EGGD 1 1 1 1 1 1 1 1	GE_EGHH										14					1
LEIB_EGHI 1 1 1 1 1 1 LEIR_EGHI 1 1 11 11 11 11 LEMG_EGHI 1 1 11 11 12 LEMG_EGGD 2 6 6 6 LEMI_EGHH 1 14 6 1 29 LEMA_EGGD 1 2 4 1 16 3 1 21 LEPA_EGGD 1 2 1 16 3 1 21 1	LEIB_EGHI 1 1 1 1 1 1 LEIR_EGHI 1 1 11 11 11 12 LEMG_EGHH 1 1 11 11 12 12 LEMG_EGHH 1 1 11 11 12 12 LEMG_EGHI 1 1 11 11 12 12 LEMG_EGHI 1 2 0 2 0 2 2 LEMI_EGGD 2 0 6 1 29 2 2 2 LEMA_EGGD 1 2 4 1 16 3 1 21 LEPA_EGGD 1 2 1 16 3 1 21 1<	LEIB_EGHI 1 1 1 1 1 LEIR_EGHI 1 1 11 1 1 LEMG_EGHH 1 1 11 11 12 LEMG_EGHH 1 1 11 11 12 LEMG_EGHH 1 1 11 11 12 LEMG_EGHH 1 2 2 2 2 2 LEM_EGGD 1 2 4 1 16 3 1 2 LEPA_EGHH 1 1 16 3 1 21 1 <td>LEIB_EGHI 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>GE_EGHI</td> <td></td> <td></td> <td>2</td> <td></td>	LEIB_EGHI 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GE_EGHI			2												
LEIR_EGHI 1 1 1 1 1 1 LEMG_EGHH 1 1 11 11 12 LEMG_EGHI 1 1 11 11 12 LEMG_EGHI 1 2 0 2 1 12 LEMI_EGGD 2 0 0 2 0 2 2 LEMI_EGHH 0 1 14 6 1 29 29 2 20 11 <	LEIR_EGHI 1 1 1 1 1 1 LEMG_EGHH 1 1 11 11 12 LEMG_EGHI 1 1 11 11 12 LEMG_EGHI 1 2 1 11 12 LEMI_EGGD 2 6 6 6 LEPA_EGGD 2 6 6 6 LEPA_EGGD 1 2 4 1 16 3 1 21 LEPA_EGGHI 1 1 16 3 1 21 1 </td <td>LEIR_EGHI I</td> <td>LEIR EGHI 1 1 1 1 LEMG EGHH 1 1 11 11 LEMG EGHI 1 1 11 11 LEMG EGHI 1 1 11 12 LEMG EGHI 1 1 11 12 LEMI EGGD 2 2 2 2 LEM EGHI 1 6 6 6 LEPA EGGD 1 2 1 14 6 129 LEPA EGHI 1 16 3 121 121 LEPA EGHI 1 16 3 121 121 LEVA EGHI 1 1 11 11 121 LEVA EGGD 1 1 1 13 13 LEVC EGHI 1 1 1 1 1 LFMU EGGD 1 1 1 1 1 LFMU EGGD 1 1 1 1 1 1 AO total 2 4 7 9 1 1 3</td> <td>B_EGGD</td> <td></td> <td></td> <td>1</td> <td>5</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td>4</td> <td></td> <td>2</td> <td></td> <td></td> <td>1</td>	LEIR_EGHI I	LEIR EGHI 1 1 1 1 LEMG EGHH 1 1 11 11 LEMG EGHI 1 1 11 11 LEMG EGHI 1 1 11 12 LEMG EGHI 1 1 11 12 LEMI EGGD 2 2 2 2 LEM EGHI 1 6 6 6 LEPA EGGD 1 2 1 14 6 129 LEPA EGHI 1 16 3 121 121 LEPA EGHI 1 16 3 121 121 LEVA EGHI 1 1 11 11 121 LEVA EGGD 1 1 1 13 13 LEVC EGHI 1 1 1 1 1 LFMU EGGD 1 1 1 1 1 LFMU EGGD 1 1 1 1 1 1 AO total 2 4 7 9 1 1 3	B_EGGD			1	5	1					4		2			1
LEMG_EGHH 1 1 11 11 12 LEMG_EGHI 1 2 1 11 12 LEMI_EGGD 2 6 6 6 LEMI_EGHH 6 14 6 1 LEMI_EGHH 1 14 6 2 LEMI_EGHH 1 16 3 1 LEPA_EGGD 1 2 4 1 16 LEPA_EGHI 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGGD 1 1 1 1 1 1 1 LEVC_EGGD 2 2 2 2 2 2 2 LFMU_EGGD 1 1 1 1 1 1 1 LMML EGHH 1 1 1 1 1 1 </td <td>LEMG_EGHH 1 1 11 11 12 LEMG_EGHI 1 2 1 11 12 LEMI_EGGD 2 6 6 6 LEMI_EGHH 6 6 6 6 LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGGD 1 2 4 1 16 3 1 21 LEPA_EGGHH 1 16 3 1 21 1 16 1 29 LEPA_EGHI 1 16 3 1 21 1</td> <td>LEMG_EGHH 1 1 1 11 12 LEMG_EGH 1 1 1 11 12 LEMG_EGGD 2 2 1 2 1 11 LEMI_EGGD 1 2 4 1 14 6 1 29 LEPA_EGH 1 1 16 3 1 21 LEPA_EGH 1 1 16 3 1 21 LEPA_EGH 1 1 1 16 3 1 21 LEPA_EGH 1 1 1 1 1 1 1 1 1 LEVC_EGGD 1 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164 LFML_EGH 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164 Wetwork Manager</td> <td>LEMG_EGHH 1 1 11 12 LEMG_EGH 1 1 1 11 12 LEMG_EGD 2 2 2 2 2 2 2 LEMI_EGH 2 4 1 14 6 1 29 LEPA_EGH 1 1 16 3 121 LEPA_EGH 1 1 16 3 1 21 LEPA_EGH 1 1 1 1 10 1 1 LEVC_EGD 1 2 4 1 1 10 1 1 LEVC_EGD 1 2 4 7 9 10 1 1 1 1 1 1 12 1 1 164 Without 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164 Wetwork Manager 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>B_EGHI</td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	LEMG_EGHH 1 1 11 11 12 LEMG_EGHI 1 2 1 11 12 LEMI_EGGD 2 6 6 6 LEMI_EGHH 6 6 6 6 LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGGD 1 2 4 1 16 3 1 21 LEPA_EGGHH 1 16 3 1 21 1 16 1 29 LEPA_EGHI 1 16 3 1 21 1	LEMG_EGHH 1 1 1 11 12 LEMG_EGH 1 1 1 11 12 LEMG_EGGD 2 2 1 2 1 11 LEMI_EGGD 1 2 4 1 14 6 1 29 LEPA_EGH 1 1 16 3 1 21 LEPA_EGH 1 1 16 3 1 21 LEPA_EGH 1 1 1 16 3 1 21 LEPA_EGH 1 1 1 1 1 1 1 1 1 LEVC_EGGD 1 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164 LFML_EGH 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164 Wetwork Manager	LEMG_EGHH 1 1 11 12 LEMG_EGH 1 1 1 11 12 LEMG_EGD 2 2 2 2 2 2 2 LEMI_EGH 2 4 1 14 6 1 29 LEPA_EGH 1 1 16 3 121 LEPA_EGH 1 1 16 3 1 21 LEPA_EGH 1 1 1 1 10 1 1 LEVC_EGD 1 2 4 1 1 10 1 1 LEVC_EGD 1 2 4 7 9 10 1 1 1 1 1 1 12 1 1 164 Without 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164 Wetwork Manager 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B_EGHI		1							1						
LEMG EGHI 1	LEMG EGHI 1	LEMG EGHI I I I I I I I I I I I I I I I I I I	LEMG_EGHI 1 1 2 1 1 1 1 2 1 1 16 LEMI_EGGD 1 2 1 2 1 1 1 6 3 1 21 LEMI_EGHH 6 1 29 LEPA_EGGD 1 2 4 1 1 1 6 3 1 21 LEPA_EGHI 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	UR_EGHI											1				:
LEMI_EGGD 2 6 2 LEMI_EGHH 2 1 6 6 LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGTE 1 1 1 16 3 1 21 LEPA_EGTE 1	LEMI_EGGD 2 6 2 LEMI_EGHH 6 6 6 LEPA_EGGD 1 2 1 14 6 1 29 LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGGH 1 2 4 1 16 3 1 21 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGTE 1 1 1 1 1 1 1 LEVC_EGGD 2 2 2 2 2 2 2 LFBE_EGHI 1 2 1 1 1 1 1 LFMU_EGGD 6 6 6 6 6 1 1 1 LFML_EGHH 1 1 1 3 11 1 1 1 1 1 LMML_EGHH 1 1 1 3 1 1	LEMI_EGGD 2 2 6 6 6 6 6 LEPA_EGGD 1 2 4 1 6 1 29 LEPA_EGHH 1 6 1 29 LEPA_EGHH 1 6 1 1 16 3 1 21 LEPA_EGH 1 1 6 3 1 21 LEPA_EGH 1 1 6 1 1 1 1 LEVC_EGGD 1 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LEMI_EGGD 2 2 6 6 6 6 LEPA_EGGD 1 2 4 1 6 1 29 LEPA_EGHH 1 1 1 6 3 1 21 LEPA_EGHH 1 1 1 1 6 3 1 21 LEPA_EGHH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MG_EGHH						1				11					1
LEMI_EGHH I	LEMI_EGHH I I I 6 6 6 LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGHH I I 16 3 1 21 LEPA_EGHH I I 16 3 1 21 LEPA_EGHH I I I6 3 1 21 LEPA_EGHH I I I6 3 I 21 LEPA_EGTE I I I6 3 I 21 LEPA_EGTE I I I I I I I LEVC_EGGD I I I I I I I I LFBE_EGHI I I I I I I I I I I LFMU_EGGD I I I I I I I I I I LMML_EGHH I I I I I I I I I <t< td=""><td>LEMI_EGHH 6 6 6 6 6 6 6 6 1 29 LEPA_EGGD 1 2 4 1 1 16 3 1 21 LEPA_EGHH 1 1 1 16 3 1 21 LEPA_EGH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td><td>LEMI_EGHH </td><td>MG_EGHI</td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	LEMI_EGHH 6 6 6 6 6 6 6 6 1 29 LEPA_EGGD 1 2 4 1 1 16 3 1 21 LEPA_EGHH 1 1 1 16 3 1 21 LEPA_EGH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LEMI_EGHH	MG_EGHI			1												
LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 1 LEVC_EGGD 2 2 2 2 2 2 2 LFBE_EGHI 1 1 1 1 1 1 1 1 LFMU_EGGD 2 6 2 1 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 AO total 2 4 7 9 1 1 1 1 1 1 LMML_EGHH	LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGH 1 1 16 3 1 21 LEPA_EGTE 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 1 LEVC_EGGD 2 2 2 2 2 2 2 LFBE_EGHI 1 1 1 1 1 1 1 1 LFMU_EGGD 6 6 6 6 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 1 AO total 2 4 7 9 1 1 1 1 1 1 1	LEPA_EGGD 1 2 4 1 14 6 1 29 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGHI 1 1 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 1 1 LEPA_EGGD 1 1 1 1 3 1 1 1 LEVC_EGGD 1 1 1 2 1 1 2 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 1 1 LMML_EGHH 1 </td <td>LEPA_EGGD 1 2 4 1 1 14 6 1 299 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGTE 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 1 LEVC_EGGD 1 1 2 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 1 1 1 1 1 AO total 2 4 7 9 10 1 1 3 11 1 1 1 1 1</td> <td>MI_EGGD</td> <td></td> <td></td> <td></td> <td></td> <td>2</td> <td></td>	LEPA_EGGD 1 2 4 1 1 14 6 1 299 LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGTE 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 1 LEVC_EGGD 1 1 2 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 1 1 1 1 1 AO total 2 4 7 9 10 1 1 3 11 1 1 1 1 1	MI_EGGD					2										
LEPA_EGHH 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 1 LEVC_EGGD 2 2 2 2 2 2 2 1 LFBE_EGHI 1 1 1 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 AO total 2 4 7 9 1 1 1 1 1 1 LMML_EGHH <	LEPA_EGHH 1 16 3 1 21 LEPA_EGHI 1 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGHI 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 LEVC_EGGD 2 2 2 2 2 2 LFBE_EGHI 1 2 6 6 6 6 LFMU_EGGD 1 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 AO total 2 4 7 9 1 1 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 <	LEPA_EGHH 1 1 16 3 1 21 LEPA_EGHI 1 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 1 LEVC_EGGD 1 1 2 1 2 1 2 LFBE_EGHI 1 1 1 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 1 1 AO total 2 4 7 9 10 1 1 3 11 1 1 1 1 1 1 1 1 1 1 1 1 1	LEPA_EGHH I	MI_EGHH			_							6				_	
LEPA_EGHI 1	LEPA_EGHI 1	LEPA_EGHI 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 1 LEVC_EGGD 1 1 1 1 1 1 1 1 LEVC_EGGHI 1 1 2 1 2 1 2 LFBE_EGHI 1 1 1 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 1 AO total 2 4 7 9 10 1 1 3 11 1 1 1 LEWACK Image: Image:<	LEPA_EGHI 1 1 1 1 1 1 LEPA_EGTE 1 1 1 1 1 1 1 LEVC_EGGD 1 1 2 1 1 1 1 LEVC_EGGHI 1 2 1 2 1 2 2 LFBE_EGHI 1 1 1 1 1 1 1 LFMU_EGGD 6 6 6 6 6 6 LFH_EGTE 1 1 1 1 1 1 LMML EGHH 1 1 1 1 1 1 1 AO total 2 4 7 9 10 1 1 3 11 1 <td>PA_EGGD</td> <td>1</td> <td></td> <td>2</td> <td>4</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td>14</td> <td></td> <td></td> <td></td> <td></td> <td>2</td>	PA_EGGD	1		2	4	1					14					2
LEPA_EGTE 1 1 1 1 LEVC_EGGD 3 3 3 3 LEVC_EGHI 1 2 2 2 LFBE_EGHI 1 2 1 1 LFMU_EGGD 6 6 6 6 LFMU_EGGD 1 1 1 1 LMML_EGHH 1 1 1 1 AO total 2 4 7 9 1 1 1 Manager ***** ***** ***** ***** ***** *****	LEPA_EGTE 1 1 1 1 LEVC_EGGD 3 3 3 3 LEVC_EGHI 1 2 2 2 LFBE_EGHI 1 6 1 1 LFMU_EGGD 6 6 6 6 LFTH_EGTE 1 1 1 1 AO total 2 4 7 9 1 1 1 1 MML_EGHH 1 1 1 1 1 1 1 1 AO total 2 4 7 9 1 1 1 1 1 1	LEPA_EGTE I	LEPA_EGTE 1 1 1 1 1 LEVC_EGGD 1 1 1 3 1 3 LEVC_EGHI 1 1 2 1 2 1 2 LFBE_EGHI 1 1 1 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 LFMU_EGGD 1 1 1 1 1 1 1 1 LMML_EGHH 1 1 1 1 1 1 1 1 1 AO total 2 4 7 9 10 1 1 3 11 1 1 1 LMML_EGHH 1 <td>PA_EGHH</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td>16</td> <td></td> <td>3</td> <td></td> <td>1</td> <td>2</td>	PA_EGHH								1		16		3		1	2
LEVC_EGGD 3 3 3 LEVC_EGHI 1 2 2 2 2 LFBE_EGHI 1 2 6 2 LFBE_EGHI 1 6 6 6 LFTH_EGTE 1 6 6 LFTH_EGTH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LEVC_EGGD 3 3 3 LEVC_EGHI 1 2 2 2 2 LFBE_EGHI 1 2 2 2 1 2 LFBE_EGHI 1 6 6 6 LFTH_EGTE 1 6 6 LFTH_EGTH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LEVC_EGGD	LEVC_EGGD	PA_EGHI		1	_												
LEVC_EGHI 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	LEVC_EGHI 1 2 2 2 2 2 2 2 1 2 2 2 1 1 1 1 1 1 1	LEVC_EGHI 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LEVC_EGHI 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_									_			1			
LFBE_EGHI 1	LFBE_EGHI 1	LFBE_EGHI 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LFBE_EGHI 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_									_	-					
LFMU_EGGD 6 6 LFTH_EGTE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LFMU_EGGD 6 6 LFTH_EGTE 1 6 LMML_EGHH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LFMU_EGGD 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LFMU_EGGD 6 6 6 LFTH_EGTE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_		_		_	_				2					_	
LFTH_EGTE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LFTH_EGTE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LFTH_EGTE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LFTH_EGTE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_		1	-	_										_	
MML_EGHH 1 1 1 AO total 2 4 7 9 10 1 1 3 111 1 12 1 1 164 Image: Network Manager Image: Image: <thimage:< th=""> Image: Image:</thimage:<>	MML_EGHH 1 1 1 AO total 2 4 7 9 10 1 1 3 111 1 12 1 1 164 Image: Network Manager Image: Image: <thimage:< th=""> Image: Image:</thimage:<>	IMML_EGHH 1 1 1 1 AO total 2 4 7 9 10 1 1 3 11 1 12 1 1 164 Immunol Immunol <td>IMML_EGHH 1 1 1 1 1 1 AO total 2 4 7 9 10 1 1 3 111 1 12 1 1 164 Immunolity Immuno</td> <td></td> <td></td> <td></td> <td>_</td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td>6</td> <td></td> <td></td> <td></td> <td>_</td> <td></td>	IMML_EGHH 1 1 1 1 1 1 AO total 2 4 7 9 10 1 1 3 111 1 12 1 1 164 Immunolity Immuno				_	_	_					6				_	
AO total 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164	AO total 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164	AO total 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164	AO total 2 4 7 9 10 1 1 1 3 111 1 12 1 1 164	_			1	_	_									_	
Network Manager	Network Manager	EUROCONTROL Network Manager	EUROCONTROL Network Manager		-														
Manager Manager	Manager Manager	EUROCONTROL Manager	EUROCONTROL Manager	O total	2	- 4	7	9	10	1	1	1	. 3	111	1	12	1	1	16
										EUR		ROL	-						

ig the difference



LF3503 – example LEAL to EGHQ





Low uptake by CFSPs/AOs for various reasons

Interim report in February

Possible re-conduction of Dynamic RAD in summer 2022





Maastricht Upper Area Control Centre



Pre Flight Check / Major Results (Provisional)

■ ICTOT ■ RRP ■ XREG

EF 42%

XREG

31%

RRP 22%

- From 15-Sept until 15 Nov 2021, MUAC in partnership with ATC units in core Europe, over 80 Aircraft Operators and the network management, generated Flight Improvements for over 1700 flights using various new procedures and tools.
- Results are being compiled and analysed for a final report before end 2021



MUAC / CI21 with Vertical Flight Efficiency

- The 2 elements in PFC / CI21 with strongest relevance to VFE are:
 - Re-filing advise allowing flights more fuel optimum cruising levels, overriding network constraints that prohibit such profiles when and where feasible and acceptable
 - Tactical acceptance of flights at higher levels, being pre-dominantly flights planned in lower airspace due to network constraints but for which room to cruise in Upper Airspace could be found.

Improved profiles: Improved levels: Average improvement per improved flight: 1298 Flights 72924 Flight levels 5600 Feet

making the difference

Thank you for your kind attention!

I making the difference

Service and service and