

# ULDs with integrated telemetry



**ULD Care Conference  
Vancouver  
May 7, 2013**

# Unneeded Maintenance

January '12						
St	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February '12						
St	M	Tu	W	Th	F	Sa
			1	2	3	4
5	On Hold					11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

March '12						
St	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April '12						
St	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

May '12						
St	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

June '12						
St	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

July '12						
St	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

August '12						
St	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

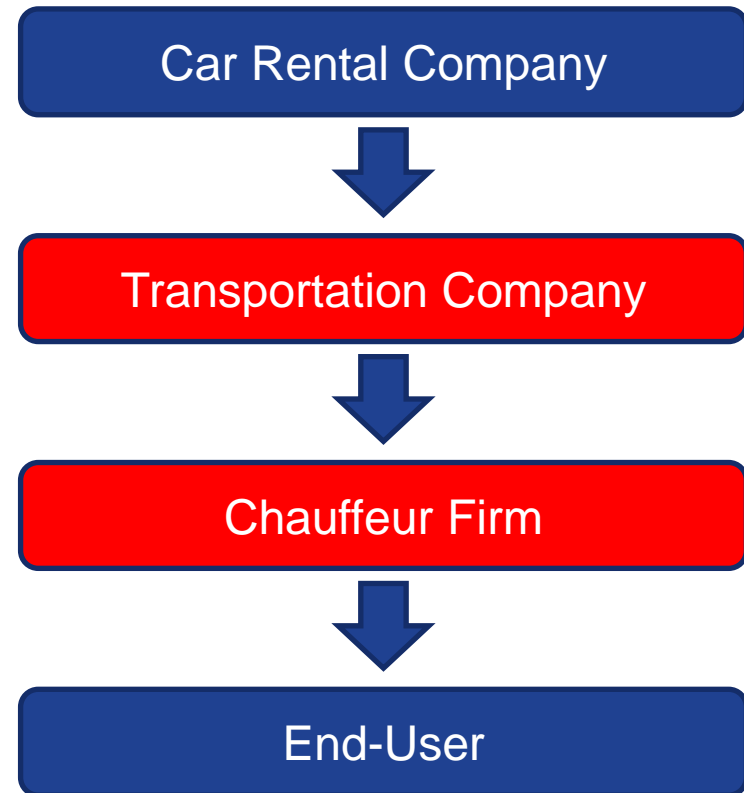
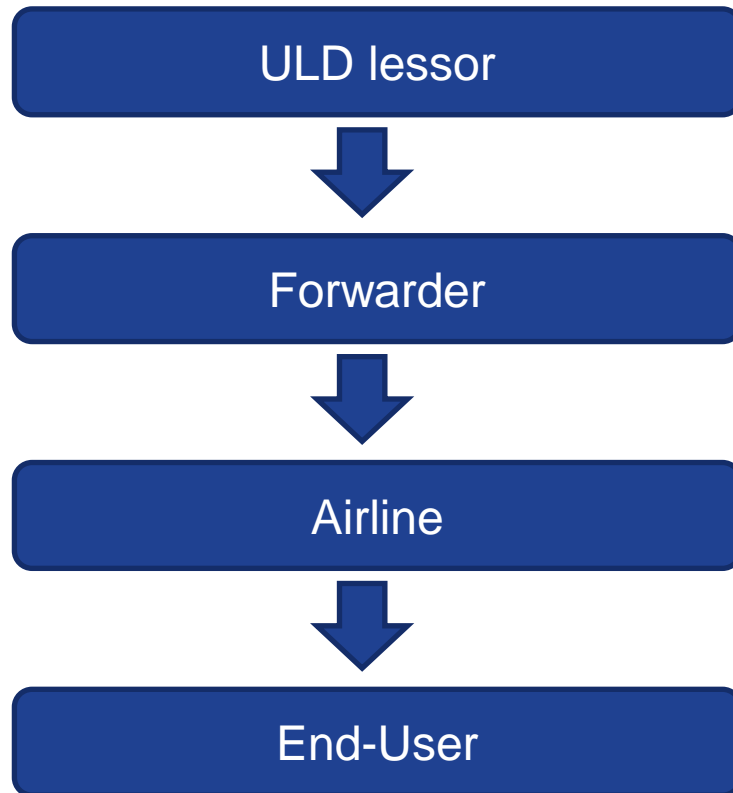
September '12						
St	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

October '12						
St	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

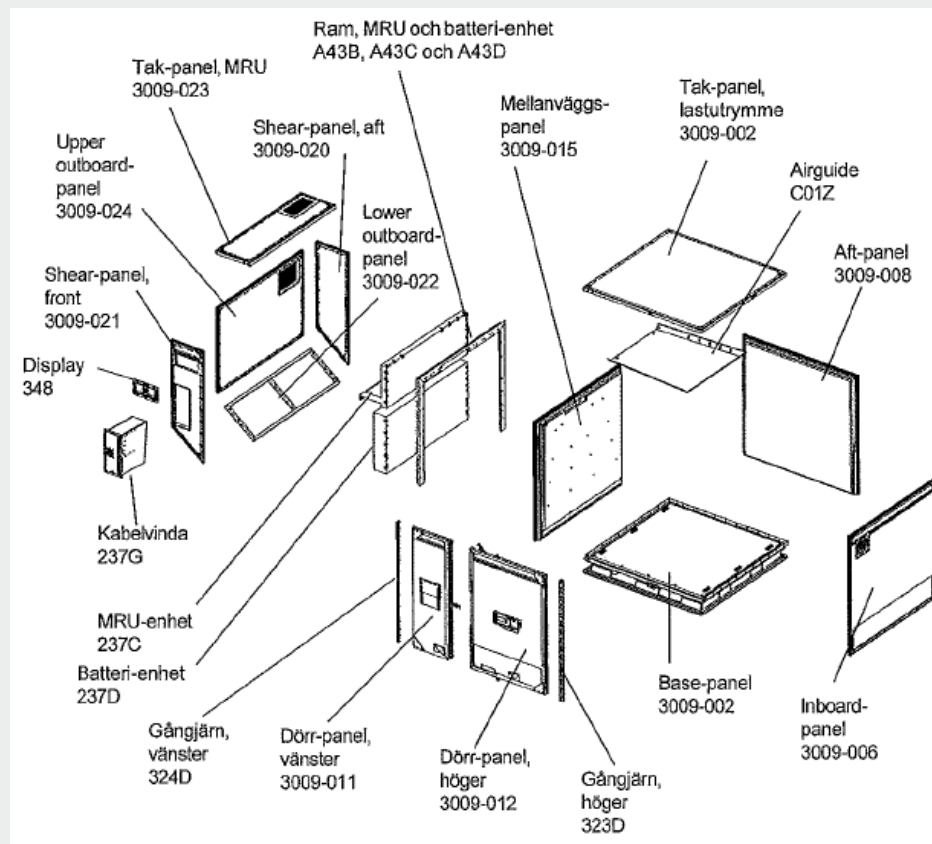
November '12						
St	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December '12						
St	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

# Plan availability due to many stakeholders



# Reactive Maintenance



# Humans make mistakes



# Solution: ULD with integrated telemetry

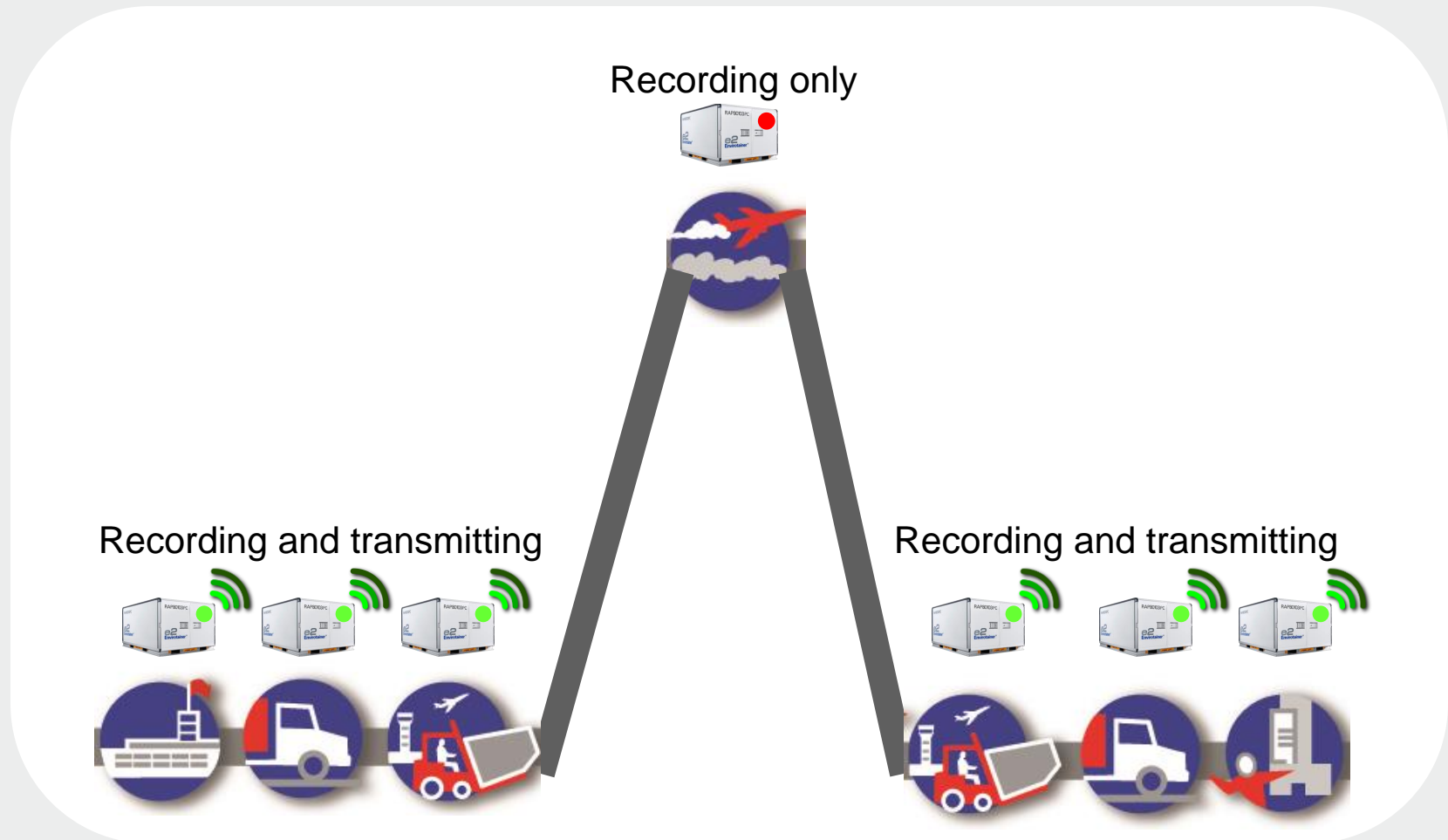


# Work wherever – no additional infrastructure





# Transmit on ground but record all the time





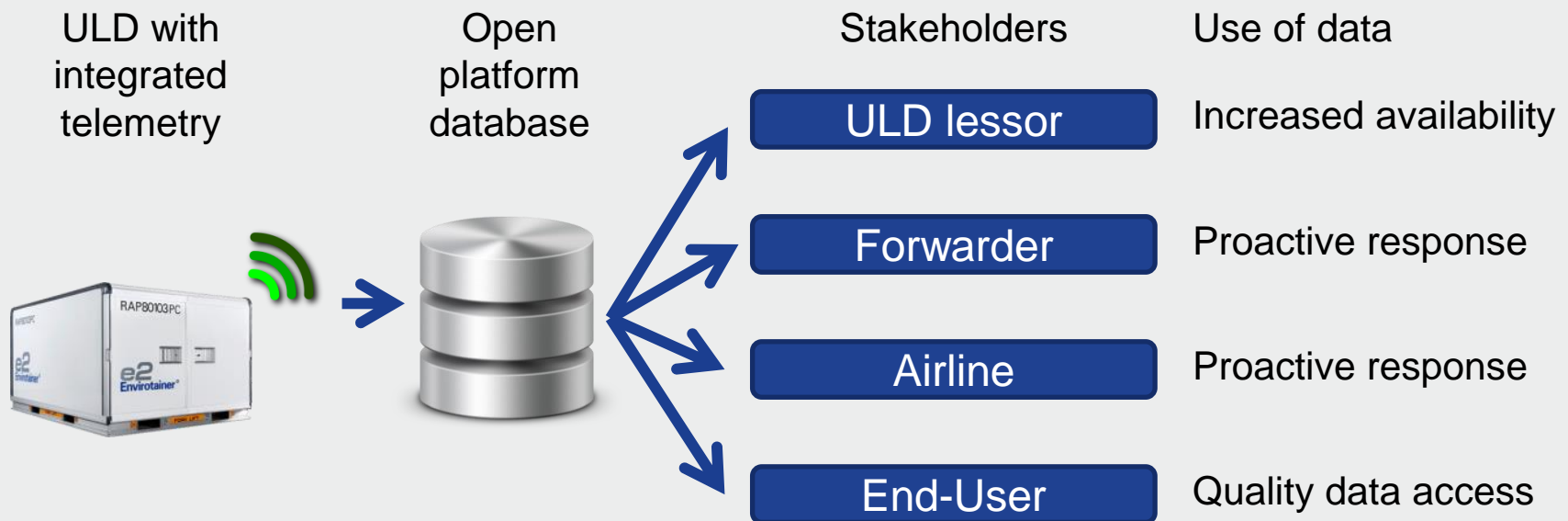
# Automatic aircraft detection - FAA compliant mode

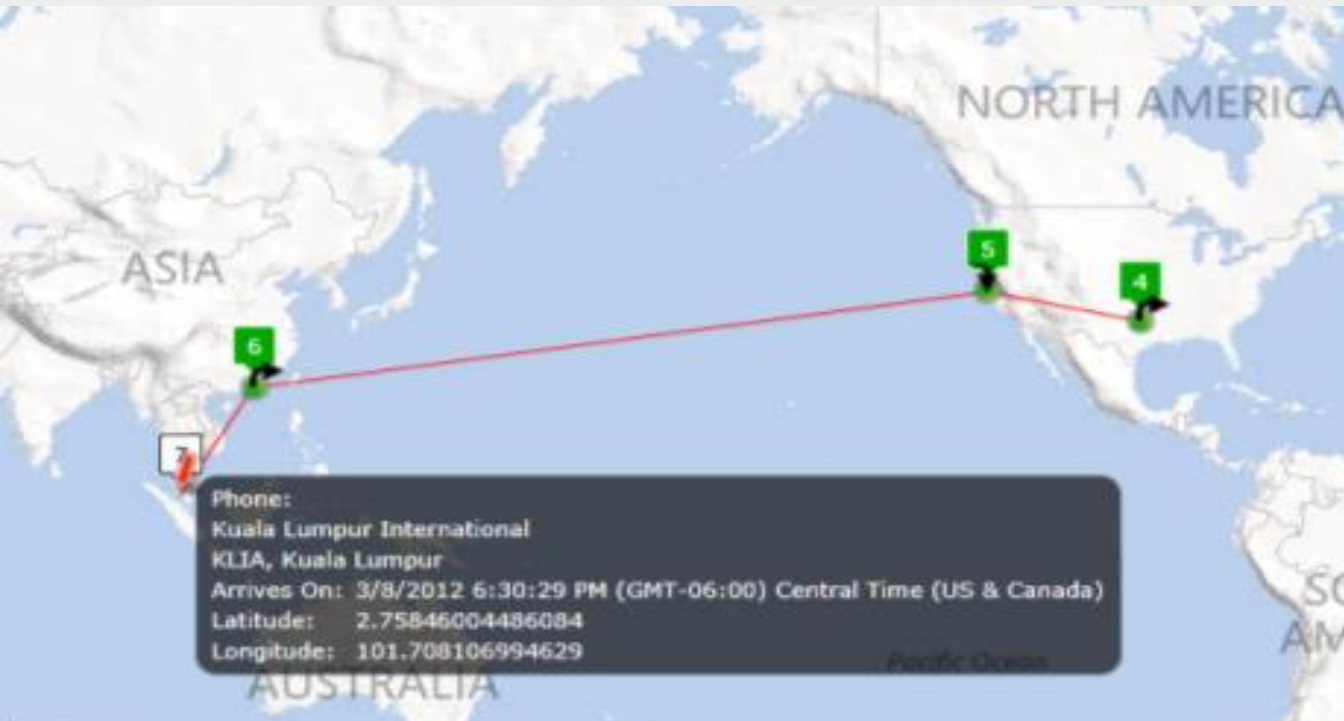


# Use of telemetry on ULDs already possible today



# More possibilities with ULDs with integrated telemetry





Date Received	Address	Latitude	Longitude	Wz	Bat	Batt	E	Temp	Pr	
10/16/2012 5:58:35 PM	TX-161, Irving, TX 75038	32.88053	-96.9902	64800	100%	4.1	0%	0	82 F	29
10/12/2012 11:20:34 AM	W Walnut Hill Ln, Irving, TX 75038	32.86613	-96.98618	64800	24%	3.6	0%	0	79 F	30
10/16/2012 5:58:32 PM	TX-161, Irving, TX 75038	32.88053	-96.9902	64800	100%	4.1	0%	0	82 F	29



# Summary: ULDs with integrated telemetry is the future

Problem	With Telemetry	Impact
Unneeded Maintenance	Removed	Higher availability
Plan availability due to many stakeholders	Increased logistics	Higher availability
Reactive Maintenance	Proactive instead	Higher availability/ Reduce product loss
Humans make mistakes	Active response	Reduce product loss

End of presentation