

DOCUMENTO 2

MEMORIA DEL PROYECTO

Table of Contents

SECTION 1

1	INTRODUCTION	4
1.0	PROBLEM DESCRIPTION.....	4
1.1	STATE OF THE ART	6
1.2	EGPWS IN A SIMULATOR.....	9
1.3	SYSTEM OVERVIEW	11
1.4	GROUND PROXIMITY WARNING	14
1.5	TERRAIN ALERTING AND DISPLAY	15
1.6	TERRAIN CLEARANCE FLOOR.....	17

SECTION 2

2	DEFINITIONS	18
----------	--------------------------	-----------

SECTION 3

3	SYSTEM DESCRIPTION	20
3.0	EGPWS DATABASE	20
3.1	SYSTEM INPUTS	22
3.2	SYSTEM OUTPUTS	27
3.3	SYSTEM FUNCTIONS	31
3.3.0	MODE CONTROL.....	31
3.3.0.1	AIR/GROUND MODE	31
3.3.0.2	GPWS TAKEOFF/APPROACH MODE	31
3.3.0.3	MODE 2 TAKEOFF	32
3.3.0.4	TERRAIN AWARENESS ALERTING GUARD.....	32
3.3.0.5	SIMULATOR REPOSITION	32
3.4	GPWS FUNCTIONS.....	33
3.4.0	MODE 1 – EXCESSIVE DESCENT RATE	33
3.4.1	MODE 2 – EXCESSIVE TERRAIN CLOSURE RATE.....	37
3.4.2	MODE 3 – ALTITUDE LOSS AFTER TAKEOFF	41
3.4.3	MODE 4 – UNSAFE TERRAIN CLEARANCE.....	44
3.4.4	MODE 5 – EXCESSIVE GLIDESLOPE DEVIATION	50
3.4.5	MODE 6 – ADVISORY CALLOUTS	55
3.5	ENHANCED FUNCTIONS	59
3.5.0	TERRAIN CLEARANCE FLOOR.....	59
3.5.1	RUNWAY FIELD CLEARANCE FLOOR	62
3.5.2	TERRAIN ALERTING AND DISPLAY.....	64
3.5.2.0	Aircraft Data Inputs	65
3.5.2.1	Terrain Database	65
3.5.2.2	Airport Database	65

3.5.2.3	EGPWS Panel.....	65
3.5.2.4	Terrain Threat Detection.....	66
3.5.2.5	Terrain Display	70

SECTION 4

4	EGPWS IMPROVEMENTS.....	75
4.0	PEAKS MODE DISPLAY	75
4.1	MODE 7-WINDSHEAR DETECTION.....	77
4.2	GEOMETRIC ALTITUDE	78
4.3	ENVELOPE MODULATION.....	79
4.4	EGPWS SELF-TEST	80

SECTION 5

5	OPERATIONAL PROCEDURES.....	81
5.0	SYSTEM CONSTRAINTS	81
5.1	SYSTEM ACTIVATION.....	82
5.2	NORMAL PROCEDURES	83
5.3	ABNORMAL PROCEDURES.....	84
5.4	EMERGENCY PROCEDURES.....	85

SECTION 6

6	CONCLUSIONS.....	86
----------	-------------------------	-----------

SECTION 7

7	APPENDIX.....	87
7.0	CONTROLLED FLIGHT INTO TERRAIN.....	87
7.1	AIRCRAFT ACCIDENTS/INCIDENTS 2004	92
7.2	JUST HOW EFFECTIVE IS EGPWS?.....	96
7.3	PREVENTION OF CONTROLLED FLIGHT INTO TERRAIN IN GENERAL AVIATION OPERATIONS.....	100

SECTION 8

8	REFERENCES.....	104
----------	------------------------	------------

	AGRADECIMIENTOS.....	105
--	-----------------------------	------------