NGRS

6 juin 2019

DSAC/PN/FOR

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

MINISTÈRE
DE LA TRANSITION
ÉCOLOGIQUE
ET SOLIDAIRE

dgac

DSAC

Direction Générale de l'Aviation Civile

Ministère de la Transition écologique et solidaire

COMMENT SE FAIT LE CHOIX D'UN OUTIL?

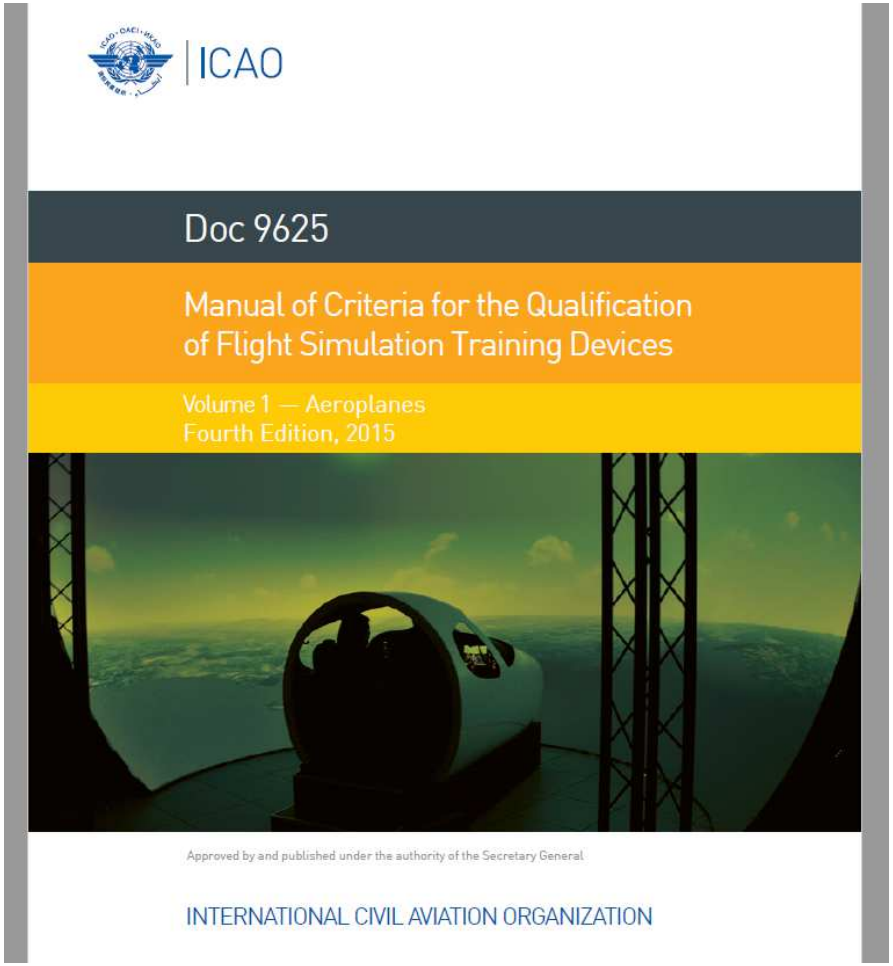
Niveau pré-déterminé par le réglement, parmi les 4 types de FSTD

Les FSTD ne sont pas tous utilisés au maximum de leurs possibilités

Ceci est en particulier vrai pour les FTD

Il faut affiner cela.

DU MUR A LA BRIQUETTE



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9. TR (TYPE RATING) — MASTER MATRIX DATA

9.1 TR — Master matrix data — Training (T) — The introduction of a specific training task

			TR (T)											
Source		Competency Element or Training Task	Flight Deck Layout and Structure	Flight Model (Aero and Engine)	Ground Handling	Aeroplane Systems	Flight Controls and Forces	Sound Cues	Visual Cues	Motion Cues	Environment — ATC	Environment — Navigation	Environment — Atmosphere and Weather	Environment — Aerodromes and Terrain
ICAO	2.1	Perform dispatch duties	S	N	R	S	N	N	N	N	N	S	G	N
ICAO	2.2	Provide flight crew and cabin crew briefings	S	N	R	S	N	N	N	N	N	S	G	N
ICAO	2.3	Perform pre-flight checks and cockpit preparation	S	N	R	S	S	R	N	N	N	S	G	N
ICAO	2.4	Perform engine start	S	S	R	S	S	R	N	N	G	S	R	N
ICAO	2.5	Perform taxi out	S	S	S	S	S	R	R	N	G	S	R	R
ICAO	2.6	Manage abnormal and emergency situations	S	S	S	S	S	R	R	N	G	S	R	R
ICAO	2.7	Communicate with cabin crew, passengers and company	S	N	S	S	S	R	R	N	N	S	R	R
ICAO	3.1	Perform pre-take-off and pre-departure preparation	S	S	S	S	S	R	R	N	G	S	R	R
ICAO	3.2	Perform take-off roll	S	S	S	S	S	R	R	N	G	S	R	R
ICAO	3.3	Perform transition to instrument flight rules	S	S	S	S	S	R	R	N	G	S	R	R
ICAO	3.4	Perform initial climb to flap retraction altitude	S	S	N	S	S	R	R	N	G	S	R	R
ICAO	3.5	Perform rejected take-off	S	S	S	S	S	R	R	N	G	S	R	R
ICAO	3.6	Perform navigation	S	S	N	S	S	R	N	N	G	S	R	N
ICAO	3.7	Manage abnormal and emergency situations	S	S	N	S	S	R	N	N	G	S	R	N
ICAO	4.1	Perform standard instrument departure/en-route navigation	S	S	N	S	S	R	N	N	G	S	R	N

DU MUR A LA BRIQUETTE

Source		Competency Element or Training Task	Flight Deck Layout and Structure	Flight Model (Aero and Engine)	Ground Handling	Aeroplane Systems	Flight Controls and Forces	Sound Cues	Visual Cues	Motion Cues	Environment — ATC	Environment — Navigation	Environment — Atmosphere and Weather	Environment — Aerodromes and Terrain
ICAO	2.1	Perform dispatch duties	S	N	R	S	N	N	N	N	N	S	G	N
ICAO	2.2	Provide flight crew and cabin crew briefings	S	N	R	S	N	N	N	N	N	S	G	N
ICAO	2.3	Perform pre-flight checks and cockpit preparation	S	N	R	S	S	R	N	N	N	S	G	N
ICAO	2.4	Perform engine start	S	S	R	S	S	R	N	N	G	S	R	N
ICAO	2.5	Perform taxi out	S	S	S	S	S	R	R	N	G	S	R	R

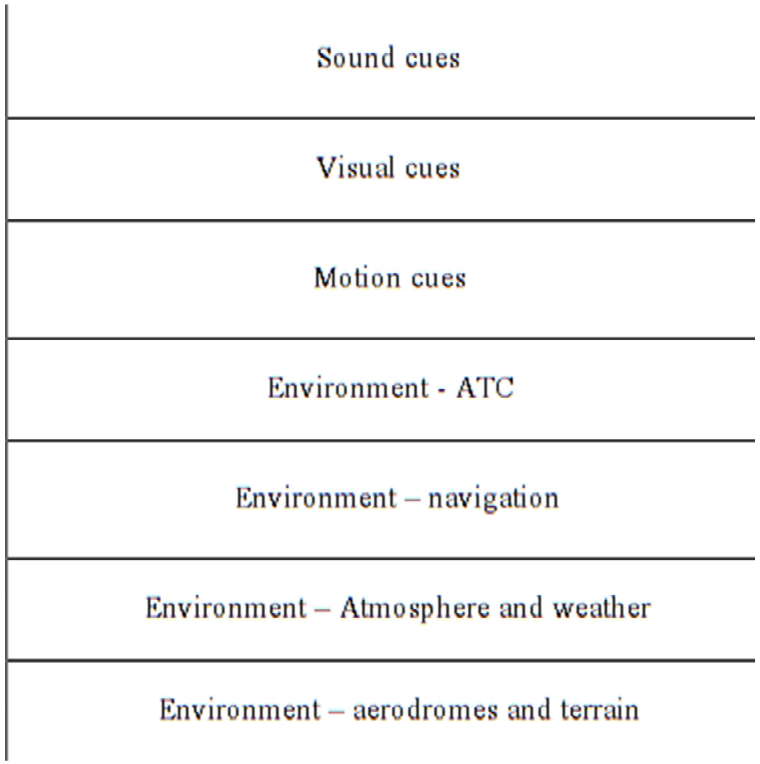
DU MUR A LA BRIQUETTE

	MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES	Testing and checking (T&C) Training (T)	Flight deck/cockpit layout and structure	Flight model (aerodynamics and engine)	Ground handling	Aircraft systems	Flight controls and forces	Sound cues	Visual cues	Motion cues	Environment - ATC	Environment – navigation	Environment – Atmosphere and weather	Environment – aerodromes and terrain
3.4.10	Ground proximity warning system, weather radar, radio altimeter, transponder	T&C	S	S	N	S	S	R	S	R	G	S	R	R
		T	S	S	N	S	S	R	S	N	G	S	G	R
3.4.11	Radios, navigation equipment, instruments, flight management system	T&C	S	S	N	S	S	R	S	R	G	S	R	R
		T	S	R	N	S	S	R	S	N	G	S	G	R
3.4.12	Landing gear and brake	T&C	S	S	S	S	S	R	S	R	G	S	R	R
		T	S	R	S	S	S	R	S	N	G	S	G	R
3.4.13	Slat and flap system	T&C	S	S	S	S	S	R	S	R	G	S	R	R
		T	S	R	S	S	S	R	S	N	G	S	G	R
3.4.14	Auxiliary power unit	T&C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		T	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Intentionally left blank													
3.6	Abnormal and emergency procedures:													
3.6.1	Fire drills e.g. engine, APU, cabin, cargo compartment, flight deck, wing and electrical fires including evacuation	T&C	S	S	S	S	S	R	S	R	G	S	R	R
		T	S	R	S	S	S	R	S	N	G	S	G	R
3.6.2	Smoke control and removal	T&C	S	S	N	S	N	R	S	R	G	S	R	R
		T	S	R	N	S	N	R	S	N	G	N	N	R
		T&C	S	S	N	S	S	R	S	R	S	S	R	R

DU MUR A LA BRIQUETTE

Flight deck/cockpit layout and structure
Flight model (aerodynamics and engine)
Ground handling
Aircraft systems
Flight controls and forces

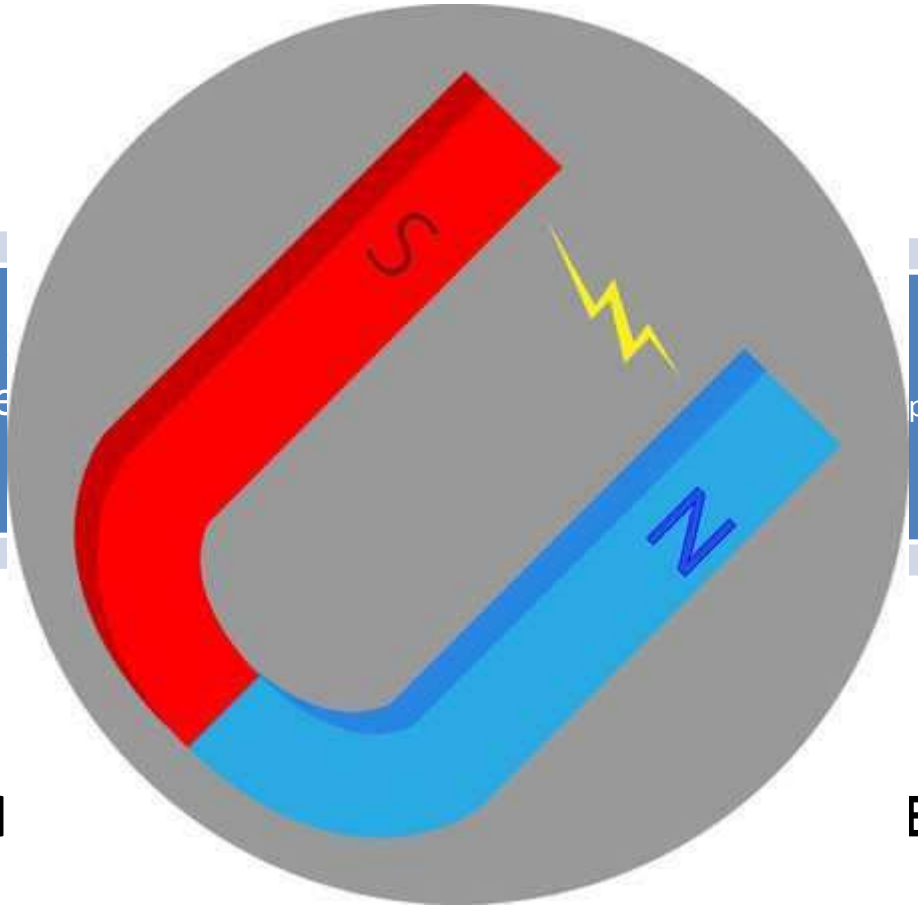
DU MUR A LA BRIQUETTE



DU MUR A LA BRIQUETTE

Tâche

Be



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Fonction

UTILI **EUR**

COMMENT SAVOIR CE QUE VAUT UN FSTD ?

FSTD No EU-A0161

S/N: L-3 Link Simulation & training / L1439

Airbus A320-200

Located at

Turk Hava Yollari A.O.
Avcılar Sk. No: 55
Şenlikköy Mahallesi
34153 Florya / Bakırköy / İstanbul
Turkey

FSTD DATA SHEET

A.	Type or variant of aircraft:	Airbus A320-200 standard 1.9
B.	FSTD qualification level:	AEROPLANE FFS LEVEL D
C.	Primary reference document:	CS-FSTD(A) initial issue
D.	Visual system:	Rockwell Collins, EP8100, LCoS projectors, FOV 200degx40deg
E.	Motion system:	L-3 Link Simulation & training, 60 inch, electric hydraulic, 6 DOF
F.	Engine fit:	IAE V2527-A5 and CFM 56-5B4
G.	Instrument fit:	According to aircraft type Airbus standard 1.9
H.	ACAS fit:	TCAS II (ver. 7.1)
I.	Windshear:	Profiles available
J.	Additional capabilities:	None
K.	Restrictions or limitations:	None

L.	Guidance information for training, testing and checking considerations							
CAT I	RVR	550	m	DH	200	ft	yes
CAT II	RVR	300	m	DH	100	ft	yes
CAT III (lowest minimum)	RVR	75	m	DH	no		yes
LVTO	RVR	125	m				yes
Recency							yes
IFR-training / check							yes / yes
Type rating							yes
Proficiency checks							yes
Autocoupled approach							yes
Autoland / roll out guidance							yes / yes
ACAS I /II							n/a / yes
Windshear warning system / predictive windshear							yes / yes
WX-radar							yes
HUD / HUGS							n/a / n/a
FANS							n/a
GPWS / EGPWS							n/a / yes
GPS							yes
ETOPS capability							yes
Other:	Smoke, Advanced Surface Movement Guidance and Control Systems (A-SMGCS) at EGLL, Electronic Flight Bag (EFB) type A, RNP APCH limited to: [LNAV, LNAV/VNAV, AR], Airborne Traffic Situational Awareness (ATSAW)							

COMMENT SAVOIR CE QUE VAUT UN FSTD ?

L.	Guidance information for training, testing and checking considerations							
CAT I		RVR	550	m	DH	200	ft	yes
CAT II		RVR	300	m	DH	100	ft	yes
CAT III (lowest minimum)		RVR	75	m	DH	no		yes
LVTO		RVR	125	m				yes
IFR-training / check								yes / yes
Type rating								yes
Proficiency checks								yes
Autoland / roll out guidance								yes / yes
ACAS I /II								n/a / yes
Windshear warning system / predictive windshear								yes / yes
WX-radar								yes
HUD / HUGS								n/a / n/a
FANS								n/a
GPWS / EGPWS								n/a / yes
GPS								yes
ETOPS capability								yes

COMMENT SAVOIR CE QUE VAUT UN FSTD ?

A.	Type or variant of aircraft:	
B.	Primary reference document:	
C.	Visual system:	
D.	Engine fit:	
E.	Avionic fit:	
F.	Simulation Standard:	
G.	Fully represented Systems (FTD only):	
H.	Restrictions or limitations:	

I.	FSTD simulation features and fidelity levels						
1.	Flight deck layout and structure	☒ S	☐ R			☐ G	☐ N
2.	Flight model (aerodynamics and engine)	☒ S	☐ R			☐ G	☐ N
3.	Ground handling	☒ S	☐ R			☐ G	☐ N
4.	Aeroplane/Helicopter systems (ATA)	☒ S	☐ R				☐ N
5.	Flight controls and forces	☒ S	☐ R	☐ R1		☐ G	☐ N
6.	Sound cues		☒ RA	☐ RB	☐ RC	☒ G	☐ N
7.	Visual cues	☒ S	☐ R			☐ G	☐ N
8.	Motion cues		☒ R	☐ R1			☐ N
9.	Vibration cues *(for helicopter only)*	☒ S	☐ R	☐ R1			☐ N
10.	Environment — ATC	☒ S				☐ G	☐ N
11.	Environment — navigation	☒ S					☐ N
12.	Environment — atmosphere and weather		☒ R			☐ G	☐ N
13.	Environment — aerodromes, heliports and terrain	☒ S	☐ R			☐ G	☐ N

S – Specific; R- Representative, R1 – lower than representative, G – Generic, N - None

TRANSITION : DOMAINE D'APPLICATION

Dans un premier temps, uniquement les **qualifications de type** (délivrance et maintien)

Avions

T (Training) TP (Training to proficiency)

TRANSITION : TYPE DE FSTD CONCERNÉS

Logiquement : FFS et FTD

Nécessité d'un traitement global :
- Passer tous les FSTD à la même moulinette
- Traiter de façon différenciée

Mais au fait : la notion de « type » fait-elle encore sens?

Non, mais oui. Le système devient dual

Probable disparition des FFS A et C, des BITD. Nouvelles appellations pour FTD et FNPT.

TRANSITION : DÉFINITION DES BRIQUES

Source : OACI

13 « features »
3 niveaux de fidélité

Transposition FFS C et D => NGRS par défaut

Deux niveaux de requis : T (Training) TP (Training to proficiency)

			FSTD Features												
FSTD Type	FSTD Level	Equivalent Level (and training)	Flight Deck Layout and Structure	Flight Model (Aero and Engine)	Ground Handling	Aeroplane Systems	Flight Controls and Forces	Sound Cues	Visual Cues	Motion Cues	Environment — ATC	Environment — Navigation	Environment — Atmosphere and Weather	Environment — Aerodromes and Terrain	Miscellaneous
FFS	D	ICAO Type VII / FAA Level D (TR/MPL4/Re)	S	S	S	S	S	R	S	R	S	S	R	R	S
	B	ICAO TYPE VI (MPL 3)	R	R	R	R	R	R	S	R1	S	S	R	R	S
FTD	C	ICAO Type V / FAA L7 (TR)	S	S	S	S	S	R	R	N	G	S	R	R	R
	B	Systems operations and procedures	S	S	R	S	S	R	N	N	G	S	R	N	R
	A	Issue 2 FTD L2 (but S can be a single a/c system as issue 2 FTD L1)	R	R	G	S	R	G	N	N	N	S	G	N	R
FNPT	D	ICAO Type IV (MPL 2)	R	G	G	R	G	R	G	N	G	S	G	R	G
	C (II MCC)	ICAO Type III (CR)	R	R	R	R	R	G	R	N	N	S	G	G	G
	B (I)	ICAO Type II (IR)	G	G	G	R	G	G	G	N	G	S	G	G	G
	A	ICAO Type I (PPL/CPL) (MPL1)	R	R	R	R	R R1	G	R G	N	N G	S	G	G	G
			FSTD Feature Fidelity Levels												

TRANSITION : MISE EN MUSIQUE

FFS C et D : traduction pré-établie

FTD : évaluation (à la première récurrente après mise en vigueur)

FNPT : status quo

ON S'Y PREND COMMENT?

- **From 10 June** Focussed Consultation – a 3 week written consultation with the relevant advisory bodies covering only the proposed changes to the FSTD certificate at rule level and associated AMC/GM. This approach is taken to achieve the sole remaining EASA slot for Opinion (linked to RMT.0599) publication in 2019
- Q4/2019 Opinion publication– Proposed rule changes to take on board outcome of the advisory body consultation, and to be reflected with planned said Opinion.
- Q4/2019 NPA publication – Remaining amendments to CS-FSTD (A) and associated AMC/GM to be consulted with NPA in Q4/2019, ED Decision foreseen by Q2/2020.
- All regulatory changes to be in place by summer 2020, to be followed by up to 12 months transition to allow for safety promotion, implementation, training, etc.

Questions ?