Table\_of\_Requirements

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Chapter 1: Requirement Set: Table\_of\_Requirements

Description

Custom Attribute Registries

|  |  |
| --- | --- |
| Name | Classification |
| Type | Edit |
| Description | Imported from Excel:Classification |
| Name | Date |
| Type | Edit |
| Description | Imported from Excel:Date |
| Name | Objective |
| Type | Edit |
| Description | Imported from Excel:Objective |
| Name | Required By |
| Type | Edit |
| Description | Imported from Excel:Required By |
| Name | Values |
| Type | Edit |
| Description | Imported from Excel:Values |

Implementation Status

Total: 41, Implemented: 0, Justified: 0, None: 41

Verification Status

Total: 41, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 41

Change Information No change issue detected.

Import1 References to Table\_of\_Requirements.xlsx (Requirements)

Requirement Type Container

ID Table\_of\_Requirements!Requirements

Description

Read-only references to Microsoft Excel document.

Custom Attributes

Classification:

Date:

Objective:

Required By:

Values:

Change Information No change issue detected.

Implementation Status

Total: 41, Implemented: 0, Justified: 0, None: 41

Verification Status

Total: 41, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 41

Comments

---- Commented by Update at 19-Feb-2025 18:01:09 (Rev:1) ----

There are no changes

1 Cost

Requirement Type Functional

ID 1

Description

The aircraft must be extremely affordable, or cannot be manufactured due to strict budgetary constraints.

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: Flyaway Cost < $20 million per aircraft

Required By: RFP

Values: Flyaway Cost < $25 million per aircraft

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

2 Manufacturing

Requirement Type Functional

ID 2

Description

There shall be a minimum number of aircraft produced

Custom Attributes

Classification: SHALL

Date: 9/27/2024

Objective: 1000

Required By: RFP

Values: 1000

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

3 Structures

Requirement Type Functional

ID 3

Description

The aircraft must have specific design load factors in clean configuration with 50% internal fuel

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: +7 and -3 vertical g's

Required By: RFP

Values: +7 and -3 vertical g's

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

4 Structures

Requirement Type Functional

ID 4

Description

Aircraft must withstand a dynamic pressure of 2133 psf when flying at Mach 1.2 at sea level

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 2,133 psf

Required By: RFP

Values: 2,133 psf

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

5 Structures

Requirement Type Functional

ID 5

Description

Aircraft must have a safety factor on all loads

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 1.5

Required By: RFP

Values: 1.5

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

6 Structures

Requirement Type Functional

ID 6

Description

The aircraft must have a minimum design service life

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 2000 hrs

Required By: RFP

Values: 2000 hrs

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

7 Stability and Control

Requirement Type Functional

ID 7

Description

The aircraft must have a static margin less than or equal to 10%.

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: ≤ |10%|

Required By: RFP

Values: ≤ |10%|

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

8 Mission Performance

Requirement Type Functional

ID 8

Description

The aircraft must perform over the Intercept Mission Radius

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 200 nm

Required By: RFP

Values: 200 nm

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

9 Mission Performance

Requirement Type Functional

ID 9

Description

The aircraft must perform over DCA Mission CAP endurance at 300 nm radius

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 4 hrs

Required By: RFP

Values: 4 hrs

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

10 Performance

Requirement Type Functional

ID 10

Description

The aircraft must reach a specific maximum mach number at maneuver weight (50% internal fuel)

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 1.6

Required By: RFP

Values: 1.6

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

11 Performance

Requirement Type Functional

ID 11

Description

Aircraft must be able to takeoff and land at any NATO runway

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 4500 ft

Required By: RFP

Values: 8000 ft

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

12 Aircraft Systems

Requirement Type Functional

ID 12

Description

The aircraft must have remote pilot capability

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: N/A

Required By: RFP

Values: N/A

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

13 Aircraft Systems

Requirement Type Functional

ID 13

Description

Fuel tanks must be self-healing

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: N/A

Required By: RFP

Values: N/A

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

14 Project Deadline

Requirement Type Functional

ID 14

Description

The engine selected for the aircraft must be in production or forcast to be in production

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 2027

Required By: RFP - Attachment 6

Values: 2027

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

15 Aircraft Systems

Requirement Type Functional

ID 15

Description

Electrical and hydraulic systems power requirement

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 50 kW

Required By: RFP - Attachment 6

Values: 50 kW

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

16 Aircraft Systems

Requirement Type Functional

ID 16

Description

Environmental control systems and avionics liquid cooling system % of engine mass flow

Custom Attributes

Classification: MUST

Date: 9/27/2024

Objective: 0.02

Required By: RFP - Attachment 6

Values: 0.02

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

17 Payload

Requirement Type Functional

ID 17

Description

The aircraft must have air-to-air weapons systems

Custom Attributes

Classification: MUST

Date: 9/30/2024

Objective: ≥ 3 AIM-120s

Required By: RFP

Values: Trade AIM-120s

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

18 Stability and Control

Requirement Type Functional

ID 18

Description

The aircraft must have a phugoid mode damping ratio less than or equal to .04.

Custom Attributes

Classification: MUST

Date: 10/19/2024

Objective: ≤ .04

Required By: MIL-F-8785C

Values: ≤ .04

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

19 Stability and Control

Requirement Type Functional

ID 19

Description

The aircraft must have a short period mode damping ratio less than or equal to 2.0 and greater than or equal to 0.3.

Custom Attributes

Classification: MUST

Date: 10/19/2024

Objective: ≤ 2.0 and ≥0.3

Required By: MIL-F-8785C

Values: ≤ 2.0 and ≥0.3

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

20 Stability and Control

Requirement Type Functional

ID 20

Description

The aircraft must have a roll subsidence mode period less than or equal to 1.4 seconds.

Custom Attributes

Classification: MUST

Date: 10/19/2024

Objective: ≤ 1.4s

Required By: MIL-F-8785C

Values: ≤ 1.4s

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

21 Stability and Control

Requirement Type Functional

ID 21

Description

The aircraft must have a spiral mode period greater than or equal to 20 seconds.

Custom Attributes

Classification: MUST

Date: 10/19/2024

Objective: ≥20s

Required By: MIL-F-8785C

Values: ≥20s

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

22 Stability and Control

Requirement Type Functional

ID 22

Description

The aircraft must have a dutch roll mode damping ratio greater than or equal to 0.08.

Custom Attributes

Classification: MUST

Date: 10/19/2024

Objective: ≥0.08

Required By: MIL-F-8785C

Values: ≥0.08

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

23 Stability and Control

Requirement Type Functional

ID 23

Description

The static longitudinal (pitch) stability derivative must be less than 0.

Custom Attributes

Classification: MUST

Date: 10/19/2024

Objective: <0

Required By: FAR Part 23& 25; MIL-HDBK-1797

Values: <0

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

24 Stability and Control

Requirement Type Functional

ID 24

Description

The static lateral (roll) stability derivative must be less than zero.

Custom Attributes

Classification: MUST

Date: 10/19/2024

Objective: <0

Required By: MIL-HDBK-1797

Values: <0

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

25 Stability and Control

Requirement Type Functional

ID 25

Description

The static directional (yaw) stability derivative must be greater than zero.

Custom Attributes

Classification: MUST

Date: 10/19/2024

Objective: >0

Required By: FAR Part 23& 25; MIL-HDBK-1797

Values: >0

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

26 Stability and Control

Requirement Type Functional

ID 26

Description

The roll damping derivative should be less than zero for roll-handling qualities.

Custom Attributes

Classification: SHOULD

Date: 10/19/2024

Objective: <0

Required By: Team

Values: <0

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

27 Stability and Control

Requirement Type Functional

ID 27

Description

The pitch damping derivative should be less than zero in order to meet short period damping requirements.

Custom Attributes

Classification: SHOULD

Date: 10/19/2024

Objective: <0

Required By: Team

Values: <0

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

28 Mission Systems

Requirement Type Functional

ID 28

Description

Latency of displayed confirmation of action between UAS and operator doesn't exceed stated value for both Vehicle Motion Control and Weapon System Control

Custom Attributes

Classification: MUST

Date: 10/19/2024

Objective: <= 100 ms

Required By: MIL-STD-1472G

Values: <= 100 ms

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

29 Performance

Requirement Type Functional

ID 29

Description

The aircraft has to have an instantanious turn rate of 18 °/s at 35,000 ft.

Custom Attributes

Classification: MUST

Date: 10/20/2024

Objective: 20 °/s

Required By: RFP

Values: 18 °/s

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

30 Mission Systems

Requirement Type Functional

ID 30

Description

Provides alerts from internal sensors for all conditions listed in Table XXXV

Custom Attributes

Classification: MUST

Date: 10/24/2024

Objective: yes

Required By: MIL-STD-1472G

Values: Yes

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

31 Mission Systems

Requirement Type Functional

ID 31

Description

Contains internal sesnors detailing all vehicle state paramaters for use of pilot in Table XXXVII

Custom Attributes

Classification: MUST

Date: 10/24/2024

Objective: Yes

Required By: MIL-STD-1472G

Values: Yes

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

32 Mission Systems

Requirement Type Functional

ID 32

Description

Contains capability to automatically "return home" to launch base when position is lost for a specified amount of time.

Custom Attributes

Classification: MUST

Date: 10/24/2024

Objective: 1 hour

Required By: MIL-STD-1472G

Values: 1 hour

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

33 Mission Systems

Requirement Type Functional

ID 33

Description

Contains capability to automatically activate "kill switch" when communications are lost for a specified amount of time.

Custom Attributes

Classification: MUST

Date: 10/24/2024

Objective: 1 hour

Required By: MIL-STD-1472G

Values: 1 hour

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

34 Mission Systems

Requirement Type Functional

ID 34

Description

Contains emergency transponder hardware to determine location of vehicle when communications are lost.

Custom Attributes

Classification: MUST

Date: 10/24/2024

Objective: Yes

Required By: MIL-STD-1472G

Values: Yes

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

35 Safety

Requirement Type Functional

ID 35

Description

Aircraft must be capable of take-off and landing on icy runway

Custom Attributes

Classification: MUST

Date: 10/24/2024

Objective: 4500 ft

Required By: RFP

Values: 8000 ft

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

36 Aerodynamics

Requirement Type Functional

ID 36

Description

The vehicles AR must be smaller or equal to 5.

Custom Attributes

Classification: SHOULD

Date: 11/4/2024

Objective: AR < 5

Required By: Nicolai pg. 181

Values: AR < 5

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

37 ConOps

Requirement Type Functional

ID 37

Description

Aircraft shall have the abillity to receive commands from F-22 and/or F-35 pilots.

Custom Attributes

Classification:

Date: 2/19/2025

Objective:

Required By:

Values:

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

38 ConOps

Requirement Type Functional

ID 38

Description

Aircraft must be able to receive targeting data from F-22 and/or F-35.

Custom Attributes

Classification: MUST

Date: 2/19/2025

Objective: Link 16

Required By:

Values: Link 16

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

39 ConOps

Requirement Type Functional

ID 39

Description

Aircraft shall have in-air refueling capabilities.

Custom Attributes

Classification:

Date: 2/19/2025

Objective: receptacle (boom KC-135)

Required By:

Values: receptacle (boom KC-135)

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

40 ConOps

Requirement Type Functional

ID 40

Description

Aircraft shall be able to provide visiual of target within 40 nm.

Custom Attributes

Classification: SHALL

Date: 2/19/2025

Objective: 40 nm

Required By:

Values: 40 nm

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1

41 ConOps

Requirement Type Functional

ID 41

Description

Aircraft shall have both static countermeasure and Electronic Countermeasure (ECM) systems

Custom Attributes

Classification: SHALL

Date: 2/19/2025

Objective: Flares, Chaff, AN/ALQ-131

Required By:

Values: Flares, Chaff, AN/ALQ-131

Change Information No change issue detected.

Implementation Status

Total: 1, Implemented: 0, Justified: 0, None: 1

Verification Status

Total: 1, Passed: 0, Justified: 0, Failed: 0, Unexecuted: 0, None: 1