Pod Structure Statement of Work

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Customer, company F:

Ivan Grujic	10454
Lars Nielsen	10765
Lars Juhl Lunde	10423
Sergiu-Vlad Talnaci	201400122
Lasse Brøsted Pedersen	10769
Fatemeh Sadat Kiaeerad	201210732

Subcontractor, company G:

Steffan Lildholdt	201302499
Jeppe Ibsen	201300264
Søren Sandal	201302495
Hassan Sheeta	20011242
Anders Hansen	201308847

Revision history

Date	Ver. No	Author	Contact	Description
13-Feb-2014	1.0	Lars N.	10765@iha.dk	Initial version
17-Feb-2014	1.1	Lars L.	10423@iha.dk	Changed req. in accordance with F-MoM-2014-V1

Overview

The Royal Danish Air Force has requested Company F to deliver a self-protection suite for the F-16 combat aircraft(see Figure 1). The required solution incorporates a pod[1] and an intelligent cockpit control unit for controlling the electronic warfare suite. The pod will be dispensing payloads (chaffs[2] and flares) and hosting the Missile Warning System (MWS). The solution shall provide warning upon detection of missile threats and be able to automatically dispense payloads in response.

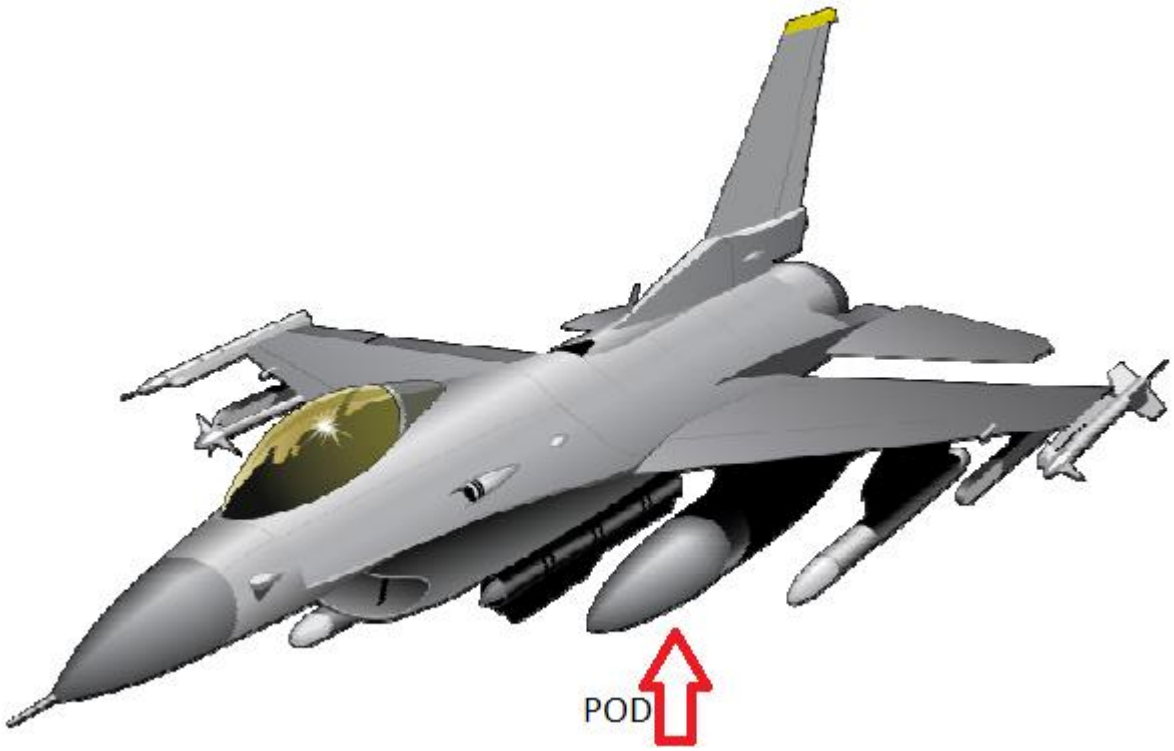

Figure 1 - F-16 combat aircraft.

The subcontractor will be responsible for making the pod structure.

- The pod shall be able to contain:
    - Dispenser assembly holding eight standard magazines.
    - Digital Sequencer Switches (DSS) for payload ignition.
    - A missile warning system (MWS).

[1] The pod is a detachable compartment on an aircraft for carrying instrumentation.
[2] Chaffs are strips of metal, foil, or glassfiber with a metal content, that are used to reflect electromagnetic energy as a radar countermeasure. Chaffs are cut into various lengths and having varying frequency responses.

Requirements for pod structure

Functional requirements

- **Pod Req 1:** The pod shall enable dispensing of payloads through suitable doors facing forwards, downwards and sideways relative to the aircraft.

System external interface requirements

- **Pod Req 2:** The pod shall be mounted with standard T-hooks spaced by 13 inches.
- **Pod Req 3:** The pod shall be mounted on the left-hand wing.
- **Pod Req 4:** The pod must provide openings for 6 discrete, shielded wires from the aircraft.
- **Pod Req 5:** The pod must provide openings for 2 wires carrying 115V AC, 400 Hz power.
- **Pod Req 6:** If a climate control system is necessary, it may consume no more than 350 watt 115V AC, 400 Hz power.

Design and construction constraints

- **Pod Req 7:** The outer physical dimensions of the pod cannot exceed 0.5m x 0.5m x 5m.
- **Pod Req 11:** The inner physical dimensions of the pod must be 0.45m x 0.45m x 4.95m.
- **Pod Req 8:** Internally the pod must contain mounting brackets for:
    - **Pod Req 8.1:** A dispenser assembly holding eight standard magazines.
    - **Pod Req 8.2:** Digital Sequencer Switches (DSS) for payload ignition.
    - **Pod Req 8.3:** A missile warning system (MWS).
- **Pod Req 9:** The weight of pod structure including climate control system cannot exceed 175 kg.

Environmental requirements

- **Pod Req 10:** The pod structure shall remain intact when exposed to steady state acceleration levels of 4g fore, 2.5 aft, 22g up and 10g down.
- **Pod Req 12:** Internal temperature of the pod cannot exceed 70 degrees Celcius when exposed to:
    - **Pod Req 12.1:** 95 degree Celcius on outer skin and 102 degree Celcius on leading edge for 25 minutes (Pod Req. 11).
    - **Pod Req 12.2:** 134 degree Celcius on outer skin and 151 degree Celcius on leading edge for 3 minutes (Pod Req. 12).

Price

The development cost including functional prototype cannot exceed 1.500.000 kr.

Deliveries

A preliminary design description shall be delivered no later than Feb 24th 2014.

The prototype must be delivered no later than week 30 in year 2015.

99 units shall be delivered in week 7 2016 (price per unit is 150.000).