Docnr 323

From: "5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB"
Sent: Tue, 19 Jan 2021 18:51:46 +0200
To: "5.1.2.e DMO/DWS&B/LUCHTVAART/RWA/NH-90" <5.1.2.E @mindef.nl>
Cc: "5.1.2.E 5.1.2.e CZSK/PCZSK/KWCARIB/CDO" <5.1.2.E @mindef.nl>; "5.1.2.e DMO/INKOOP/AIP/ILP" <5.1.2.e @mindef.nl>
Subject: RE: ARC DCCG laatste vragen

Dank voor het uitzoeken 5.1.2.e

Ik vind het wel goed dat we de detection capability erbij hebben staan. Dat maakt de eisen SMART. Wellicht is de capability zelf aan de stringente kant voor een heli maar als leveranciers geen commentaar maken, is het prima. Daarnaast is het ook wel een effectieve capability om die tijdens SAR te hebben.

Beacon mode etc. is helaas dat we te laat zijn en die niet zo genoemd hebben. Maar met een maritieme radar zou het niet zo'n probleem moeten zijn. Daarnaast hebben we bij V/UHF gesteld dat daar een homing device voor SAR frequenties op moet zitten. Die kunnen we dan ook gebruiken.

Slewing hebben we bewust besproken en was een eis van DCCG om die erin te hebben. Ben ik het ook mee eens, zeker op gebied van SAR.

Wat mij betreft dus geen wijzigingen in het PoR (wel in de compliance matrix want daar stond iets niet goed).

5.1.2.E

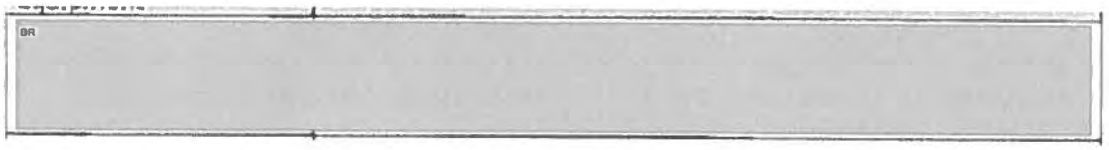
From: 5.1.2.e DMO/DWS&B/LUCHTVAART/RWA/NH-90 <5.1.2.E @mindef.nl>
Sent: dinsdag 19 januari 2021 10:09
To: 5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB <5.1.2.E @mindef.nl>
Cc: 5.1.2.E 5.1.2.e CZSK/PCZSK/KWCARIB/CDO <5.1.2.E @mindef.nl>; 5.1.2.e 5.1.2.e mindef.nl>
Subject: RE: ARC DCCG laatste vragen

Mogge 5.1.2.E

Nog even alles op een rijtje voor de radareisen heli Carib:

Als ik de heli PoR'en van het huidige contract Carib, nieuwe contract NL en het nieuwe contract Carib naast elkaar leg, vwb de radar, zien we het volgende:

Het huidige contract voor heli (Cobham):



j. Radar
The radar is used as surface radar for SAR and the detection of COI's. It shall be combined with the weather radar.

Het nieuwe (toekomstige) contract voor SAR heli NL:

Req. 85. Surface radar. A maritime surveillance radar shall be installed. The maritime surveillance radar may be combined with the weather radar (requirement 71) and shall comply with the following requirements:
a) Shall primarily be used to build up a recognized surface picture;
b) Shall also be used during SAR to detect survivors in a raft or small boat.

De gestelde eisen voor de radar voor het toekomstige contract heli Carib:

I. Radar
The radar is used as surface radar for SAR. It shall be combined with the weather radar.

The radar is primarily used to detect survivors in a raft or small boat. It is also used to build up a RSP which is used to direct rescue vessels to the position of survivors.

Parameters	Characteristics	
Coverage	Minimum 180 degrees (at least 90 degrees left and right of a/c nose), unobstructed.	
Modes	Sea surface search mode, weather avoidance mode, Moving Target Indication (MTI) mode	
Detection capability	Minimum ranges in scanning mode, a/c at required altitude, sea state 3 and with 90% probability of detection	
	Radar Cross Section (m^2)	Range (Nm)
	0.2	3
	1	30
	10	50
	100	80
	3-5	5-40

De nieuwe eisen gesteld in de PoR van de heli Carib lijken dus het meest op de eisen in de PoR van het nieuwe contract SAR heli NL (minus het tabel). Het tabel is duidelijk meeverhuisd vanuit de FW eisen voor de radar. Ik weet niet of alle providers zo kritisch naar de radar eisen hebben gekeken. Ik denk dat (voor een SAR heli) het in ieder geval verstandig is de detection capability hier weg te laten. De coverage eisen en eisen aan de modes vind ik persoonlijk wel goed (en hebben we doorgesproken met z'n allen).

Mijn voorstel zou dus zijn om de detection capabilities en bijbehorende tabel weg te laten.

Verder heeft het huidige contract (Cobham) nog wat eisen (beacon mode, navigation mode overlay, variable pulse width operation en 20 targets tracker). Als we die nog willen toevoegen is dat wel een beetje laat en hadden we dat moeten doen tijdens onze sessie op Curacao.

Voor de FW blijf ik bij mijn eerder gegeven antwoord, dat de huidige eisen realistisch zijn.

Wat mij verder nog opviel was de slewing van de EO/IR aan de radar. Die hebben we nu als requirement opgenomen, waar het eerder (huidige contract) voor de heli een optie was.

Groet,

512e

From: 512e DMO/DWS&B/LUCHTVAART/RWA/NH-90
Sent: maandag 18 januari 2021 17:23
To: 512e DMO/INKOOP/AIP/ILP 512e mindef.nl>; 512E 512E 512E DMO/PROJN/PR vOZB <512E @mindef.nl>
Cc: 512E 512e CZSK/PCZSK/KWCARIB/CDO <512E @mindef.nl>
Subject: RE: ARC DCCG laatste vragen

5.1.2.E 5.1.2.E

Ik begin nu ook te twijfelen aan de eisen van de radar (lot 2). In eerste instantie waren de eisen overgenomen van de fixed wing, maar vanwege het verschuiven van de rol naar (bijna) puur SAR zouden deze meer op die van SAR NL moeten lijken:

Req. 1. Surface radar. A maritime surveillance radar shall be installed. The maritime surveillance radar may be combined with the weather-radar (requirement 71) and shall comply with the following requirements:
a) Shall primarily be used to build up a recognized surface picture;
b) Shall also be used during SAR to detect survivors in a raft or small boat.

Volgens mij hebben zed us terecht geconcludeerd dat de eisen zijn overgenomen (onterecht) van de FW. Hier moeten we het wel even over hebben.

Groet,

5.1.2.e

From: 5.1.2.e DMO/INKOOP/AIP/ILP 5.1.2.e mindef.nl>
Sent: maandag 18 januari 2021 16:04
To: 5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB <5.1.2.E @mindef.nl>
Cc: 5.1.2.e DMO/DWS&B/LUCHTVAART/RWA/NH-90 <5.1.2.E @mindef.nl>; 5.1.2.E 5.1.2.e CZSK/PCZSK/KWCARIB/CDO <5.1.2.E @mindef.nl>
Subject: ARC DCCG laatste vragen

5.1.2.E

Hierbij de laatste vragen.

Eind deze week moeten deze beantwoord zijn incl. update van alle gecorrigeerde docs o.a. POR + compl matrix.

Groet 5.1.2.E

Docnr 324

From: "5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB"
Sent: Tue, 19 Jan 2021 19:29:50 +0200
To: 5.1.2.e DMO/INKOOP/AIP/ILP" 5.1.2.e mindef.nl>
Cc: "5.1.2.e DMO/DWS&B/LUCHTVAART/RWA/NH-90" <5.1.2.E @mindef.nl>; "5.1.2.E 5.1.2.e CZSK/PCZSK/KWCARIB/CDO" <5.1.2.E @mindef.nl>
Subject: RE: ARC DCCG laatste vragen

Bij deze,

In het document nog een aantal vragen voor 5.1.2.e en specifiek voor allen graag een "collegiale toetsing".

5.1.2.E

From: 5.1.2.e DMO/INKOOP/AIP/ILP 5.1.2.e mindef.nl>
Sent: maandag 18 januari 2021 16:04
To: 5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB <5.1.2.E @mindef.nl>
Cc: 5.1.2.e DMO/DWS&B/LUCHTVAART/RWA/NH-90 <5.1.2.E @mindef.nl>; 5.1.2.E 5.1.2.e CZSK/PCZSK/KWCARIB/CDO <5.1.2.E @mindef.nl>
Subject: ARC DCCG laatste vragen

5.1.2.E

Hierbij de laatste vragen.

Eind deze week moeten deze beantwoord zijn incl. update van alle gecorrigeerde docs o.a. POR + compl matrix.

Groet 5.1.2.E

Docnr 325

From: "512E 512E 512E DMO/PROJN/PR vOZB"
Sent: Wed, 20 Jan 2021 13:59:14 +0200
To: "512e DMO/DWS&B/LUCHTVAART/RWA/NH-90" <512E @mindef.nl>; "512e DMO/INKOOP/AIP/ILP" 512e mindef.nl>
Cc: "512E 512e BS/AL/DS/Dir. Plan./AfdLuOptr" <512E @mindef.nl>; "512E 512e CZSK/PCZSK/KWCARIB/CDO" <512E @mindef.nl>
Subject: Re: Vraag Nr 1710047 heli lot secure voice

Top uitgezocht

Van: "512e DMO/DWS&B/LUCHTVAART/RWA/NH-90" <512E @mindef.nl>
Datum: woensdag 20 januari 2021 om 12:15:00
Aan: "512e DMO/INKOOP/AIP/ILP" 512e mindef.nl>
Cc: "512E 512E 512E DMO/PROJN/PR vOZB" <512E @mindef.nl>, "512E 512e BS/AL/DS/Dir. Plan./AfdLuOptr" <512E @mindef.nl>, "512E 512e CZSK/PCZSK/KWCARIB/CDO" <512E @mindef.nl>
Onderwerp: Vraag Nr 1710047 heli lot secure voice

Goedemorgen 512E

Vraag staat onderaan:

Volgens de PoR stellen wij nergens dat de Motorola DM4000 series (or compatible) GFE is (staat ook niet in de vraag). Omdat het een gangbare radio is moet een secure voice radio compatible zijn of hetzelfde. De modellen DM4401 en DM4601 hebben wel degelijk 806-870 MHz:

GENERAL SPECIFICATIONS

	DM4600/DM4601**				DM4400/DM4401			
	VHF	350*	UHF	800**	VHF	350*	UHF	800**
Channel Capacity	Up to 1,000				32			
Frequency	136-174 MHz	350-400 MHz	UHF1 403-470 MHz UHF2 450-527 MHz	806-870 MHz	136-174 MHz	350-400 MHz	UHF1 403-470 MHz UHF2 450-527 MHz	806-870 MHz

Mijn voorstel

'Models DM4401 and DM4601 of the Motorola DM4000 series do cover the 806-870 MHz frequency band.'

Groet,

512e

Vraag:

Nr 1710047

Ref: Section 3.3, table, pg. 12 Secure Voice Communications (LOS) "Motorola DM4000 series is the DCCG standard set in-stalled in DCCG units..." and Attachment A, item h. pg. A-1

" Not a Question - DMO's information, please note: Item h. in Attachment A indicates that the required RF ranges include 806-870 MHz. The Motorola data specifications for the DM4000 series radios do not include this RF range."

Ik heb een data sheet van deze GFE radio bijgevoegd.

Docnr 326

From: "5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB"
Sent: Thu, 21 Jan 2021 11:20:50 +0200
To: "5.1.2.e DMO/DWS&B/LUCHTVAART/RWA/NH-90" <5.1.2.E @mindef.nl>; "5.1.2.E 5.1.2.e CZSK/PCZSK/KWCARIB/CDO" <5.1.2.E @mindef.nl>; "5.1.2.E 5.1.2.e BS/AL/DS/Dir. Plan./AfdLuOptr" <5.1.2.E @mindef.nl>
Cc: "5.1.2.e DMO/INKOOP/AIP/ILP" 5.1.2.e mindef.nl>
Subject: RE: radareisen heli en FW

Ok, nu begrijp ik wat je met de 450 feet bedoeld.

@ 5.1.2.E 5.1.2.E Jullie nog aanvullingen ?

5.1.2.E

From: 5.1.2.e DMO/DWS&B/LUCHTVAART/RWA/NH-90 <5.1.2.E @mindef.nl>
Sent: donderdag 21 januari 2021 10:14
To: 5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB <5.1.2.E @mindef.nl>
Cc: 5.1.2.e DMO/INKOOP/AIP/ILP 5.1.2.e mindef.nl>
Subject: RE: radareisen heli en FW

Goedemorgen 5.1.2.E

Ik kan met jouw commentaar leven. Met minimum range 450 feet wordt de minimale afstand van de radar tot een contact bedoeld (uit de specs van de RDR-1600). Dichterbij kan hij de echo's niet verwerken want dan overlappen ze.

Groet,

5.1.2.e

From: 5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB <5.1.2.E @mindef.nl>
Sent: donderdag 21 januari 2021 10:09
To: 5.1.2.e DMO/DWS&B/LUCHTVAART/RWA/NH-90 <5.1.2.E @mindef.nl>
Cc: 5.1.2.e DMO/INKOOP/AIP/ILP 5.1.2.e mindef.nl>
Subject: RE: radareisen heli en FW

Hoi 5.1.2.e

Ik denk dat we toch wat scherper moeten zijn in de eisen.

Fixed wing zou ik zo laten staan omdat ik geen teken heb dat dit anders was dan voorheen en ook geen commentaar van de kandidaten heb gezien mbt radar detectie. Laat de leveranciers maar vertellen hoe de Means of Compliance worden voorgesteld.

Heli: eens dat we dat met de nu beschikbare info iets moeten aanpassen. Maar zonder het volledig uit te kleden.
Ik zou er dan van maken:

I. Radar

- The radar is used as surface radar for SAR. It shall be combined with the weather radar.
- The radar is primarily used to detect survivors in a raft or small boat. It is also used to build up a RSP which is used to direct rescue vessels t o the position of survivors.
- Minimum 110 degrees (at least 55 degrees left and right of a/c nose), unobstructed

Parameters	Characteristics
- Mode	Sea surface search (with sea clutter filter), weather avoidance

- Detection capability; detection of small boats or bouys with a RCS of 1 M^2 down to a minimum range of 450 feet and detection range 5 Nm.

Ik neem aan dat je met 450 feet de vlieghoogte van de heli bedoeld.

512E

From: 512e DMO/DWS&B/LUCHTVAART/RWA/NH-90 <512E @mindef.nl>
Sent: woensdag 20 januari 2021 17:07
To: 512E 512E 512E DMO/PROJN/PR vOZB <512E @mindef.nl>
Cc: 512e DMO/INKOOP/AIP/ILP 512e mindef.nl>
Subject: radareisen heli en FW

512E

Ik kon je niet bereiken maar hieronder mijn voorstel (na overleg 512E) tav de radareisen voor heli en FW:

HELI

I. Radar

The radar is used as surface radar for SAR. It shall be combined with the weather radar.

The radar is primarily used to detect survivors in a raft or small boat. It is also used to build up a RSP which is used to direct rescue vessels to the position of survivors.

Parameters	Characteristics
Coverage	~~Minimum 180 degrees (at least 90 degrees left and right of a/c nose), unobstructed.~~ Komt uit military specs. Voor weather/surveillance in de neus is 120 graden gebruikelijk. Voorstel is weglaten.
Modes	Sea surface search mode, weather avoidance mode, ~~Moving Target Indication (MTI) mode~~; Voorstel is MTI weg en vervangen door sea clutter filter wat sommige neus radars hebben voor maritieme omgevingen. De RDR-1600 (opvolger van de huidige RDR-1500) heeft dit.
Detection capability;	De waarden uit de tabel behoren tot de 360 graden radars voor (militaire) maritieme doeleinden. De neusradars voor een SAR heli kunnen die performance nooit leveren. Die moeten het vooral hebben van clutterfilters en searchmodes. Die zijn genoemd hierboven. Voorstel is om hier 'detection of small boats or bouys down to a minimum range of 450 feet'. Daarmee sluiten we aan op (een van de weinige concrete) performances van de RDR-1600.

Daarmee wil ik voorstellen:

I. Radar

The radar is used as surface radar for SAR. It shall be combined with the weather radar.

The radar is primarily used to detect survivors in a raft or small boat. It is also used to build up a RSP which is used to direct rescue vessels to the position of survivors.

Parameters	Characteristics
Mode	Sea surface search (with sea clutter filter), weather avoidance
Detection capability;	detection of small boats or bouys down to a minimum range of 450 feet.

Fixed Wing

q. radar

- Weglaten de zin: *For covert performance it is required that the optimal detection probability, on small slow moving sea vessels, is possible at altitudes of 6000FT and higher.* Dit is op vele manier te interpreteren en werkt verwarrend. Ook kunnen we dit nooit toetsen.

- Weglaten de regels in het tabel voor Detection capability : 0.2m2, 3Nm **EN** 3-5 m2, 5-40Nm. Deze zijn er later bij gezet en zijn niet te herleiden naar specs van een radar (zoals de ELTA ELM-2022A waar ze vandaan komen).

Laat ons even weten of je hiermee instemt.

Groet,

Docnr 327

From: "[redacted] DMO/PROJN/PR vOZB"
Sent: Thu, 21 Jan 2021 17:00:29 +0200
To: "[redacted] DMO/INKOOP/AIP/ILP" [redacted]mindef.nl>
Cc: "[redacted] DMO/DWS&B/LUCHTVAART/RWA/NH-90" <[redacted]@mindef.nl>
Subject: FW: Vraag Nr 1710046 heli lot flight crews
Attachments: RE: ARC DCCG laatste vragen, A 18 Jan.docx

Pffffff ik heb het nog.

In Word bijlage. Nu begrijp ik ook waarom [redacted] antwoorden begin te geven op vragen die ik al beantwoord had …..

[redacted]

From: [redacted] DMO/PROJN/PR vOZB
Sent: donderdag 21 januari 2021 15:57
To: [redacted] DMO/INKOOP/AIP/ILP [redacted]mindef.nl>
Subject: RE: Vraag Nr 1710046 heli lot flight crews

In bijgevoegde email.

Maar nu begrijp ik de verwarring. Het word document zit er namelijk niet bij ☹

Ik hoop dat ik het nog heb.

[redacted]

From: [redacted] DMO/INKOOP/AIP/ILP [redacted]mindef.nl>
Sent: donderdag 21 januari 2021 15:40
To: [redacted] DMO/PROJN/PR vOZB <[redacted]@mindef.nl>
Subject: RE: Vraag Nr 1710046 heli lot flight crews

[redacted]

Welke antwoord bedoel, kon hem niet vinden.

Groet [redacted]

Van: [redacted] DMO/PROJN/PR vOZB <[redacted]@mindef.nl>
Verzonden: woensdag 20 januari 2021 12:58
Aan: [redacted] DMO/DWS&B/LUCHTVAART/RWA/NH-90 <[redacted]@mindef.nl>; [redacted]

512E <512E @mindef.nl>; 512E 512e BS/AL/DS/Dir. Plan./AfdLuOptr <512E @mindef.nl>
CC: 512e DMO/INKOOP/AIP/ILP 512e mindef.nl>
Onderwerp: Re: Vraag Nr 1710046 heli lot flight crews

Die vraag had ik al beantwoord in mijn email van gisteren

Van: "512e DMO/DWS&B/LUCHTVAART/RWA/NH-90" <512E @mindef.nl>
Datum: woensdag 20 januari 2021 om 12:29:35
Aan: "512E 512e CZSK/PCZSK/KWCARIB/CDO" <512E @mindef.nl>, "512E 512e BS/AL/DS/Dir. Plan./AfdLuOptr" <512E @mindef.nl>
Cc: "512E 512E 512E DMO/PROJN/PR vOZB" <512E @mindef.nl>, "512e DMO/INKOOP/AIP/ILP" <512e @mindef.nl>
Onderwerp: Vraag Nr 1710046 heli lot flight crews

512E 512E

Deze vraag staat nog aangaande de flight crews:

Nr 1710046

Ref. Q/A #13 (for Lot 2) PoR Section 1.3 regarding "The Service Provider will also provide sufficient and capable flight crews (pilots, sensor operators, hoisting, and medical personnel).

" The Answer to referenced question #13 indicates that the seven people on board (POB) consists of the flight crew plus at least 3 PIW/passengers of which one is on the stretcher. This leaves four POB as flight crew. With a flight crew consisting of two pilots, one sensor operator, one hoist operator, and one medical per PoR Section 1.3, the total is eight. Please clarify if the requirement is seven or eight POB."

Volgens mij gaat deze vraag vooral om het bepalen van het minimum aantal personen die veilig mee kunnen tijdens een vlucht (met 1 persoon op een stretcher), nu dus op seven POB gesteld. Dit heeft invloed op de keuze van het type kist. Ik denk dat we niet moeten sturen op de samenstelling crew + survivors/passengers (single/dual pilot, combi hoist op/medic...enz), maar op de capaciteit van de kist. Dus het antwoord op deze vraag moet simpel 7 POB of 8 POB zijn. Ik neem aan dat we hier goed over nagedacht hebben...dus roept u maar.

Groet,

512e

Docnr 328

Heli

Nr 1710047

Ref: Section 3.3, table, pg. 12 Secure Voice Communications (LOS) "Motorola DM4000 series is the DCCG standard set in-stalled in DCCG units..." and Attachment A, item h. pg. A-1

" Not a Question - DMO's information, please note: Item h. in Attachment A indicates that the required RF ranges include 806-870 MHz. The Motorola data specifications for the DM4000 series radios do not include this RF range."

Ik heb een data sheet van deze GFE radio bijgevoegd.

@ 5.1.2.e *zou je dit nog even kunnen controleren. Het is een statement dus we hoeven hier geen antwoord op te geven maar als we tot dezelfde conclusie komen, kunnen we het wel bevestigen wat mij betreft.*

Nr 1710046

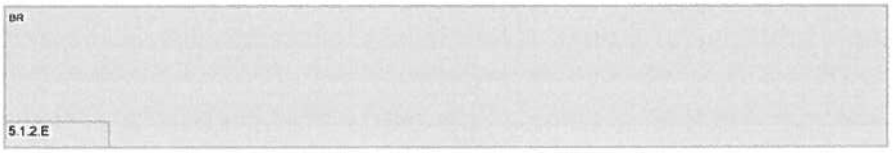
Ref. Q/A #13 (for Lot 2) PoR Section 1.3 regarding "The Service Provider will also provide sufficient and capable flight crews (pilots, sensor operators, hoisting, and medical personnel).

" The Answer to referenced question #13 indicates that the seven people on board (POB) consists of the flight crew plus at least 3 PIW/passengers of which one is on the stretcher. This leaves four POB as flight crew. With a flight crew consisting of two pilots, one sensor operator, one hoist operator, and one medical per PoR Section 1.3, the total is eight. Please clarify if the requirement is seven or eight POB."

The numbers you refer to (7 for minimum number of POB and at least 3 PIW) are correct. The roles of the crew can be combined. The role of Rescue Operator and medical can be combined for example. Paragraph 3.2 footnote 4 provides this flexibility for the Service provider.

The wording of paragraph 1.3 you refer to are not to be considered as a firm requirements but as introductory text.

BR


BR
5.1.2.E

1711676. Enclosure B2 - POR DCCG Helicopter Capacity, Attachment A, Serial L

After detailed consultation with four leading manufacturers (UK, France, Italy, Israel) in an attempt to satisfy the Lot 2 radar performance requirements, we have had independent confirmation from all of them that there are no commercially available off the shelf solutions for helicopters that are capable of meeting all of the stated requirements (See table in attachment). The significant cost and considerable technical challenge to develop a compliant radar solution (test and trials activity, procurement costs, certification process, weight, size, power requirements) are considered disproportionate for the scope and scale of the DCCG contract. The evidence provided by the radar manufacturers obliges Draken to accept their suggestion that such a high performance radar specification is more aligned to a fixed wing maritime patrol aircraft rather than helicopters of the type required by DCCG. Given the commercial-in-confidence nature of the technical information shared by the various radar manufacturers we are not able to disclose the radar performance to any 3rd party. Nevertheless, it is important to appreciate that it is our sole intention to find a compliant solution and we are able to assist the DCCG in making immediate introductions such that our findings are independently verifiable.

1. Can the DCCG review the detailed radar performance requirements and confirm that they are applicable to the helicopter solution (Lot 2) and have not been accidentally transposed from the fixed wing maritime patrol aircraft solution (Lot1)?

2. Would the DCCG accept a COTS Radar solution similar to those shown in the attachment, as an alternative means of compliance ?

Motivering: The question has potentially sensitive commercial information about our solution

Vraag Cobham

OPM 5.1.2.e *de strekking van deze vraag is m.i. gelijk aan een nog niet definitief beantwoorde mbt fixed wing. Ook mijn opm: hebben we andere requirements gesteld mbt de bestaande contracten?*

Het antwoord zal tevens in een andere algemene versie worden gesteld en beantwoord, voor beide lots.

*@ all: Nog maar een keer over praten dan: echter: de levernacier (*5.1.2.e *?) geeft aan dat er geen enkele detectie is op wat voor afstand dan ook omdat er geen search mode is. Dat lijkt me ook sterk. Volgens mij lezen ze de requirements niet op de juiste wijze. Ik zou het ook laten afhangen van de reacties van andere leveranciers en vooralsnog vasthouden aan de eis. Die kunnen we eventueel in een tweede ronde ook nar beneden bijstellen als blijkt dat geen van de leveranciers hier aan kan voldoen. Hoe dan ook. We zullen eisen voor detectability moeten stellen. Wellicht lager maar zonder is geen alternatief.*

Docnr 329

From: "512E 512E 512E DMO/PROJN/PR vOZB"
Sent: Mon, 8 Feb 2021 12:26:55 +0200
To: "512e BS/AL/DS/Dir. Plan./AfdMarOptr" <512e @mindef.nl>
Cc: "512E 512e CZSK/PCZSK/KWCARIB/CDO" <512E @mindef.nl>; "512e DMO/INKOOP/AIP/ILP" 512e @mindef.nl>
Subject: 20210208 KW Presidium voortgang luchtverkenningsprojecten DCCG
Attachments: 20210208 KW Presidium voortgang luchtverkenningsprojecten DCCG.docx

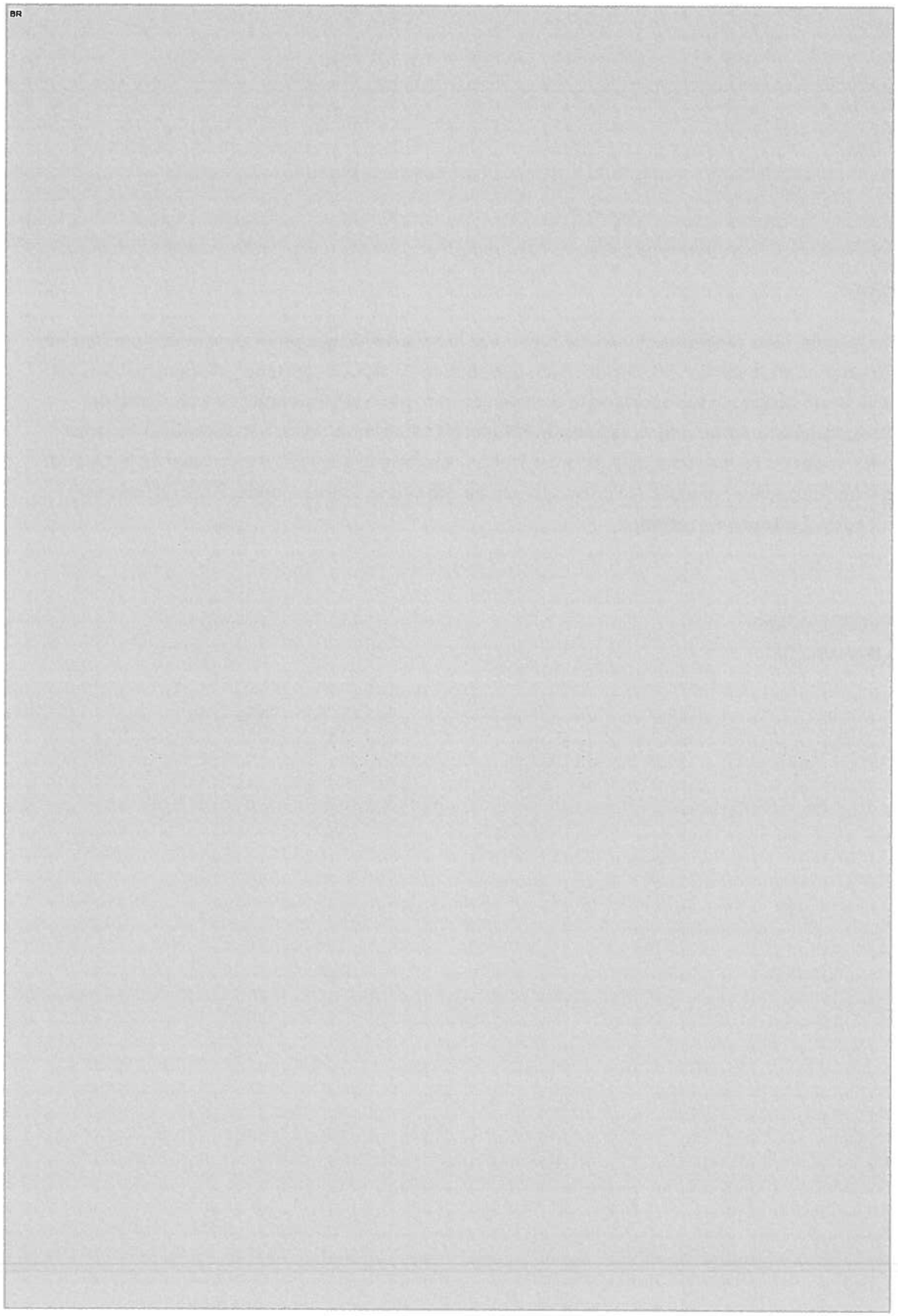
Goedemorgen 512E

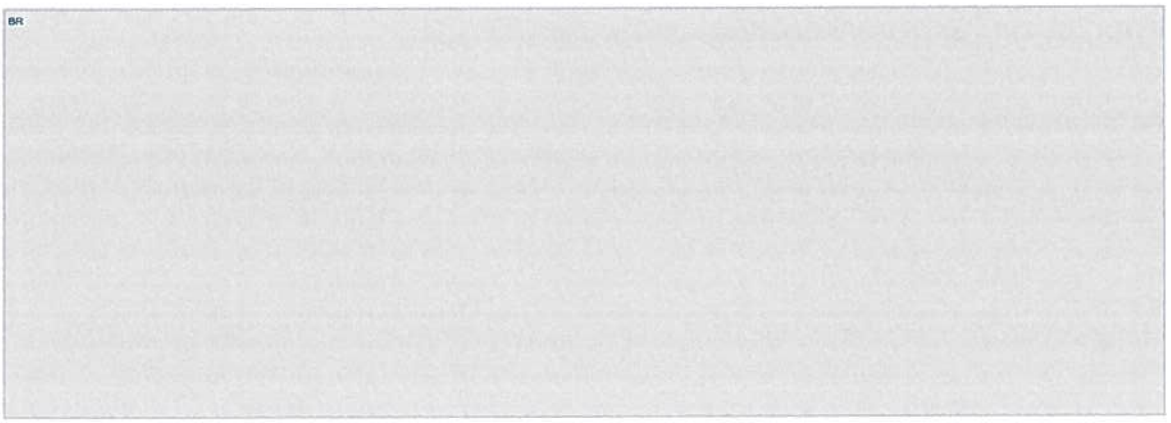
Zoals afgesproken,

512E

Docnr 330

Voortgang luchtverkenningsprojecten DCCG





Geld

Het budget zoals toegewezen voor de inhuur van luchtverkenningscapaciteit voor een periode van tien jaar na start van de volledig inzetbare diensten op Curaçao is tot stand gekomen op basis van review van de kosten van soortgelijke diensten en een ruime prijsescalatie. Tevens zijn bij de offerteaanvraag opties uitgevraagd die eventueel als "draaiknop" voor het uiteindelijk contract kunnen dienen bij overschrijding. Daarom worden vooralsnog geen risico's voorzien op het aspect van het toegewezen budget. Na ontvangst van de definitieve offertes medio 2021 zal hierover volledige duidelijkheid ontstaan.

512E

8 februari 2021

Docnr 331

From: "5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB"
Sent: Mon, 8 Feb 2021 16:28:25 +0200
To: "5.1.2.e BS/AL/DS/Dir. Plan./AfdMarOptr" 5.1.2.e @mindef.nl>
Cc: "5.1.2.E 5.1.2.e CZSK/PCZSK/KWCARIB/CDO" <5.1.2.E @mindef.nl>; "5.1.2.e DMO/INKOOP/AIP/ILP" 5.1.2.e @mindef.nl>
Subject: RE: 20210208 KW Presidium voortgang luchtverkenningsprojecten DCCG

Hoi 5.1.2.E

Interdepartmentaal vertrouwelijk is prima. BR

BR

5.1.2.E

From: 5.1.2.e BS/AL/DS/Dir. Plan./AfdMarOptr <5.1.2.e @mindef.nl>
Sent: maandag 8 februari 2021 14:21
To: 5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB <5.1.2.E @mindef.nl>
Cc: 5.1.2.E 5.1.2.e CZSK/PCZSK/KWCARIB/CDO <5.1.2.E @mindef.nl>; 5.1.2.e DMO/INKOOP/AIP/ILP 5.1.2.e mindef.nl>
Subject: RE: 20210208 KW Presidium voortgang luchtverkenningsprojecten DCCG

Beste 5.1.2.E

Dank voor het aanleveren van de VGR.

Voor mijn check, gezien dat er niet bij staat, kan ik deze informatie classificeren als 'interdepartementaal vertrouwelijk'? Dan kan het in ieder geval gedeeld worden in het Presidium met de landen.

Hartelijke groet,
5.1.2.E

5.1.2.E 5.1.2.E
5.1.2.e

.....

Directie Plannen
Defensiestaf
Ministerie van Defensie
Kalvermarkt 28 | 2511 BS | Den Haag | 5.1.2.e
Postbus 20701 | 2500 ES | Den Haag | MPC 58B

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From: 5.1.2.E 5.1.2.E 5.1.2.E DMO/PROJN/PR vOZB <5.1.2.E @mindef.nl>
Sent: maandag 8 februari 2021 11:27
To: 5.1.2.e BS/AL/DS/Dir. Plan./AfdMarOptr 5.1.2.e mindef.nl>
Cc: 5.1.2.E 5.1.2.e CZSK/PCZSK/KWCARIB/CDO <5.1.2.E @mindef.nl>; 5.1.2.e DMO/INKOOP/AIP/ILP 5.1.2.e mindef.nl>
Subject: 20210208 KW Presidium voortgang luchtverkenningsprojecten DCCG

Goedemorgen 5.1.2.E

Zoals afgesproken,

5.1.2.E

Docnr 332

From: "512E 512E 512E DMO/PROJN/PR vOZB"
Sent: Tue, 9 Mar 2021 17:22:33 +0200
To: "512E 512e CZSK/P&O/P&O/FLEXSCHIL/BURFLEXCAP/INZET" <512E @mindef.nl>
Subject: Vervanging luchtverkenningscapaciteit DCCG
Attachments: 20210122 PoR ARC DCCG Fixed Wing.docx, 20210122 PoR DCCG helicopter capability.docx, Award guide ARC DCCG NX.docx

Hallo 512E

Zoals beloofd. Veel leesplezier.

Ik stel voor dat je begint bij de Award Guide. Daarna de beide PoR.

Er wordt nog verder verwezen naar andere documenten. Die staan op de SWR en ik zal je daartoe toegang verlenen.

512E

ANNEX A

PROGRAMME OF REQUIREMENTS

DCCG Fixed Wing capability

for the

Dutch Caribbean Coastguard

Version 1.0 (dated 16 June 2020)

Table of Contents

1. Introduction

1.1 General

This Programme Of Requirements (POR) describes the requirements to be met with regard to the DCCG Fixed Wing capability for the Dutch Caribbean Coast Guard DCCG.

The concept of operations for the DCCG Fixed Wing capability is described in chapter 2. The operational, technical and training requirements for this DCCG Fixed Wing Capability are described in chapter 3. Miscellaneous issues and requirements are described in chapter 4.

In Attachment A the required equipment is described in more detail. Attachment B details responsibilities for the provision of specific equipment between State and Service provider specific. Attachment C defines the banned and restricted substances. In Attachment D the used abbreviations are defined.

1.2 DCCG Area of Responsibility and tasking

The DCCG is responsible for several tasks in their Area Of Responsibility (AOR). This is a large area, including the Territorial Waters (TTW) of the Caribbean territory of the Kingdom of The Netherlands, the Curaçao and the adjacent Flight Information Regions (FIR) and the Caribbean sea (see chart below)[1].

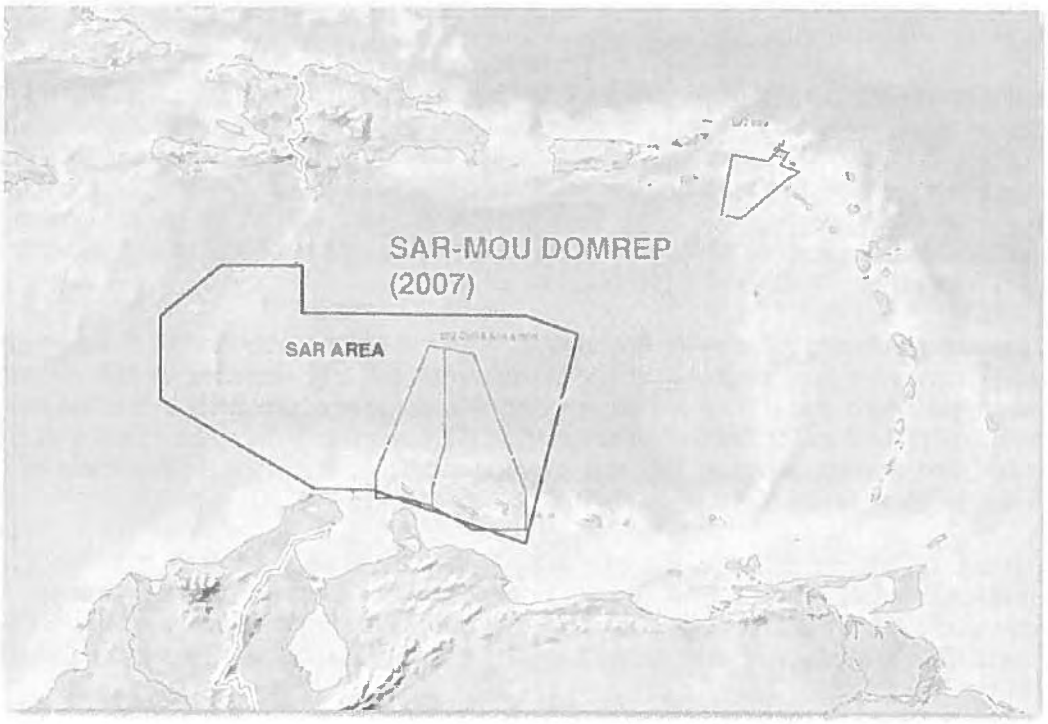

Figure 1. DCCG Area of Responsibility. (TS = Territorial Sea, EFZ = Exclusive Fishery Zone)

[1] TTW: 4.000, EEZ/EFZ; 32.000, SAR-area i.a.w. ICAO/IMO regulations 90.000 Nmi²

Both national and international legislation is applicable in the AOR. National legislation has been laid down in regulations of the Kingdom of The Netherlands as a whole and are complemented by local regulations on the individual countries. International legislation is mainly based on regulations from the International Maritime Organization (IMO) and International Civil Aviation Organization (ICAO).

The task for the DCCG is general law-enforcement, such as border patrol, customs operations, maritime patrol and control and counter drugs (CD) operations, humanitarian relief operations and Search and Rescue.

The majority of the targets of interest for the DCCG Fixed Wing capacity ranges from individual swimmers (RCS <1 m^2), water scooters (RCS 1-2 m^2), local fishing vessels/go-fasts (RCS 3 m^2) to local fruit/fish barges and sailing vessels/pleasure craft (RCS 20 m^2). Other shipping vary from coaster to medium tankers (RCS 40-10.000 m^2). These vessels (>300 GRT) are obliged to use their AIS systems. Main shipping routes are located both North and South of the Dutch Leeward islands and East and West of the Dutch windward islands. Shipping density is low to medium. The ABC and SSS islands are mainly used as a hub for illegal goods originating from Venezuela and Colombia. Their next destination is Puerto Rico, Hispaniola and Europe.

1.3 DCCG Fixed Wing Capability

The Service provider will provide DCCG Fixed Wing capability by using a number of dedicated fixed wing aircraft, equal in mission and safety equipment. With those aircraft, the Service provider should be able to meet the requirement for a continuous readiness, ensuring that at any given time at least one aircraft is airborne within 90 minutes after first alert. The number of crews should be such that all scheduled flights can be met and a continuous availability for ad-hoc flights is guaranteed.

A minimum of 2300 and a maximum of 2600 flight hours per year, for planned and ad-hoc flights, is to be expected. The flight hours will be used for DCCG tasks (as described in paragraph 2.1) and for specific Counter-drugs (CD) operations. The latter missions are flown as part of an international cooperation of Caribbean nations, in which the Royal Netherlands Navy participates. The task for the aircraft will be to detect and monitor vessels who are suspected of illegal activities, and to coordinate the interception of these vessels with other (DCCG and international) assets.

The Service provider will provide the aircraft and will be the operator of the aircraft. The Service provider will be responsible for all maintenance and servicing of the aircraft, the mission equipment and the safety equipment. Attachment C provides a detailed overview of the responsibilities for the provision of specific equipment between State and Service provider. The Service provider will also provide sufficient and capable flight crews (pilots and sensor operators).

The main operating base is Coastguard Airstation Hato, situated on the Curacao International Airport (Hato). The Service provider should use the facilities (hangar space, storage and offices) of the Coastguard Air Station Hato. Incidentally the aircraft will be assigned to operate from other airfields in the broader Caribbean area to support DCCG operations.

2. Concept of operations

This chapter describes the concept of operations for the DCCG Fixed Wing capability. The information provided in this chapter has to be used in conjunction with the requirements as laid down in chapter 3 and serves to provide a context of the DCCG fixed Wing operations.

2.1 Information Based Operations at the DCCG JRCC

The vision for future operations for the DCCG is to build and maintain a real-time Recognized Maritime Picture (RMP) at the Joint Rescue and Coordination Center (JRCC) and its assets with the aim to have a full situational awareness of the area and to enable Information Based Operations (IBO). This vision influences the requirements of the DCCG assets and its capability to exchange voice and data beyond line-of-sight (BLOS) in a secure architecture.

Mission and Tactical Control for the DCCG Fixed Wing capability is executed from the JRCC when the operational scenario requires this. The communication systems between aircraft and JRCC should support this tactical concept.

2.2 Tasks for the DCCG Fixed Wing capability

The aircraft should be capable to perform the following tasks:

Surveillance/supervision/inspection and criminal investigation tasks:

a. environmental and fishery inspection;
b. customs/immigration patrol;
c. shipping inspection;
d. general law-enforcement (LE) tasks, such as counter drugs (CD) operations;
e. Search And Rescue (SAR);
f. tactical training.

Transport tasks for limited amount of passengers and/or cargo:

g. (disaster)relief, providing a rapid insertion capability of specialized personnel and/or armed military personnel and/or first aid goods to a stricken location and the possibility of evacuating a limited amount of persons;
h. Governmental flights for transport of passengers, sometimes escorted by armed governmental personnel.

2.3 Mission profiles

Three types of mission profiles are described in this paragraph covering the majority of most important and most demanding (with regard to endurance and sensorfit) missions to be executed. The three mission profiles are examples. The aircraft will execute a wider variety of missions during planned flights.

Every flight can be retasked into a SAR- or CD mission. Therefore every flight will be executed as airborne SAR-unit.

2.3.1. Search And Rescue near the boundaries of the Area Of Responsibility.
Aim: detection, localization and rescue of people in distress.

Execution: 90 minutes after the first alert by the Joint Rescue Coordination Centre (JRCC) the aircraft will be airborne. Within these 90 minutes the maintenance crew will prepare the aircraft and the aircrew will be briefed by the JRCC about the ongoing SAR-case.

Transit to the boundary of the AOR (380 NM) will be completed in two hours after take-off. The aircraft will start a predetermined search after a descent to optimum search altitude (in most cases around 1000 feet). The search must be executed with best sensor-settings, using radar, Electro Optics/Infra Red (EO/IR), and visual detection and ranging means as search sensors. Sensor priority and set up depends on the kind of target (raft, Person In Water (PIW)), environmental conditions and the time of day. Tactical plot will be updated by using a drift buoy.

The aircraft must be able to execute search patterns for at least three hours.

Communication is paramount during the SAR tasking. The aircraft will often act as On Scene Coordinator (OSC) and therefore both the quality and amount of communication equipment as well as the capability of the aircraft crew should be sufficient to facilitate the OSC functionality.

If the aircraft detects persons in distress at the end of the three hours search, it should have enough fuel to remain on-station for one additional hour. During this hour the aircraft should be able to drop location marking signalling devices, a life-raft and/or supplies near the distress location. After completion of the on-station time, the aircraft will return to Hato within two hours transit time and must have enough fuel reserve to meet legal requirements. If the aircraft is unable to land at Hato (due to circumstances that cannot be attributed to the Service provider) it must have enough fuel to divert to a suitable alternate airfield (in principle Aruba 65 NM or Bonaire 40 NM) and land with enough fuel to meet legal requirements.

This mission profile leads to the following characteristics:

Parameter	**Characteristic**
Flight time	8 hours (incl. 4 hours at low level, excl. time to divert to a suitable alternate airfield)
Transit speed	180 knots or more
Search speed	between 160 and 220 knots
Altitude	transit at optimum FL
Coverage	available onstation time should be sufficient to complete the search area with a specified trackspacing to optain a coverage factor of 1.2 ensuring a probability of detection (POD) of 84 %.
Essential Mission Equipment	visual observation, radar, EO/IR, Visual detection and Ranging. communications (HF/UHF/VHF FM-AM/homing, AIS and SATCOM device), location markers, self locating datum marker buoys (SL-DMB), droppable liferaft.
Remarks	SAR flights are usually ad-hoc and on a continuous readiness base. Therefore execution should be possible during day and night

Table 1. Characteristics for mission profile 1

2.3.2. Ad-hoc counter-drugs operation in the AOR

Aim: to detect and monitor all shipping suspected of illegal transport of persons and/or goods towards the ABC & SSS islands or through the AOR, followed by directing surface units to intercept and apprehend these vessels.

Execution: 90 minutes after the first alert by the Operations Department, providing intelligence about a potential transport, the aircraft should be airborne. Within these 90 minutes the maintenance crew will prepare the aircraft, and the aircrew will be briefed at the JRCC (DCCG HQ at Parera naval base). The aircraft will depart Hato to an undisclosed destination. Once clear of the island it will proceed to an operational area to start a covert (silent and disguised) search. Covertness can be accomplished mainly by posture and/or sensor utilization, making best use of the environmental conditions. Targets are usually small and fast moving ships (known as Gofast (G/F)), but other vessels may also be used.

Once a possible target is detected, all efforts should be directed at determining the identity of the vessel, while avoiding counter detection. To achieve this, all sensors should be optimized for identification and the aircraft should remain outside visual detection range of the target, occasionally achieved through maintaining a covert operational condition. In case of a positive identification suspect vessel, the aircraft should maintain positive surveillance on the contact through the use of radar/EO/IR sensors and direct DCCG surface forces towards the target for interception and apprehension.

Operational intelligence information for these missions is usually limited to an expected illegal transport during night hours, to arrive at an undisclosed location at an unknown time. Therefore the aircraft should be able to execute a surveillance pattern (line barrier, box, etc.) for the minimum required flight time. If a target is detected near the end of the planned on-station period, the aircraft should have fuel for one additional hour on station to ensure a positive handover to another aircraft, ship or shore authority.

Communication is essential, preferably on (secure) nets. On open nets voice encryption will be used.

After completion of the on-station time, the aircraft will return to Hato and must have enough fuel reserve to meet legal requirements. If the aircraft is unable to land at Hato (due to circumstances that cannot be attributed to the Service provider) it must have enough fuel to divert to a suitable alternate airfield (in principle Aruba 65 NM or Bonaire 40 NM) and land with enough fuel reserve to meet legal requirements.

This mission profile leads to the following characteristics:

Parameter	**Characteristic**
Flight time	8 hours (incl. 6-7 hrs at low level, excl. time to divert to an alternate airfield)
Transit speed	180 knots or more
Search speed	between 160 and 220 knots
Altitude	optimum detection and identification altitude, while remaining covert (including a all-lights-out posture)
Essential Mission Equipment	visual using bubble windows, radar, EO/IR, communications (HF/UHF/VHF FM-AM/AIS/W-AIS/secure voice and data and SATCOM device).
Remarks	CD flights are usually ad-hoc, on a continuous readiness base. Therefore execution should be possible during day and night.

Table 2. Characteristic for mission profile 2

2.3.3. Environmental and fishery inspection in the EFZ around the SSS-islands.

Aim: to execute environmental and fishery inspection in the Exclusive Fishery Zone (EFZ) around the islands St. Maarten, St. Eustatius and Saba (SSS-area) in order to prevent illegal fishing activities as well as illegal pollution of the environment.

Execution: the crew will be briefed at the JRCC (DCCG HQ at Parera naval base) 2 hours before planned take-off time. After a two (2) hour transit flight the aircraft will arrive on station in the SSS-area. This SSS-area includes the EFZ and the TTW's around the SSS-islands. Normal patrol altitude will be around 1000 feet. The aircraft needs approximate 3-4 hours to search the area, including investigation of contacts of interest (COI's).

A predetermined route will be flown and special attention given to all vessels in general and fishing vessels (F/V) in particular. F/V in the EFZ will be checked for valid fishing licenses as well as regulatory fishing equipment. The aircraft needs to descend to the optimum altitude to be able to visually confirm names and registration numbers on vessels and observe activities aboard. The crew should therefore be familiar with low-level operations. Violators will be photographed and reported to the JRCC. If necessary a surface unit will be directed for interception and apprehension.

Detected oil spills will be reported to the JRCC and photo/video images should be collected of these spills and possible polluting vessels to be used as evidence. Communication should be established with the violating vessel to inform the captain of the violation and ensure his compliance to stop further pollution. If necessary a DCCG surface unit will be directed to intercept and apprehend.

Communications (secure and unsecure) is important. Although the SSS-area is over 500 NM northeast of Curacao, the aircraft should at all times be able to exchange (data) information (voice and data) with the JRCC about contacts who are suspected of illegal activities. Secure communication is possible via the Motorola DM4000 series (or compatible system) which uses a relaystation at Saba. Preferred data link should be through VHF LOS to enhance possibilities for wide band data streaming with SATCOM datalink as back up communication for LOS and BLOS. Unsecure communication will be via HF radio.

After completion of the on-station time, the aircraft will return to Hato and must have enough fuel reserve to meet legal requirements. If the aircraft is unable to land at Hato (due to circumstances that cannot be attributed to the Service provider) it must have enough fuel to divert to a suitable alternate airfield (in principle Aruba 65 NM or Bonaire 40 NM) and land with enough fuel reserve to meet legal requirements.

This mission profile leads to the following characteristics:

Parameter	**Characteristic**
Flight time	8 hours (incl. 4 hrs at low level, excl. time to divert to suitable alternate airfield)
Transit speed	180 knots or more
Search speed	between 160 and 220 knots
Altitude	transit at optimum FL, search at approximately 1000 feet
Essential Mission Equipment	visual using bubble windows, radar Including oil spill detection functionality), EO/IR, communications (HF/UHF/VHF, FM-AM/secure voice, AIS), photo- and video camera

Table 3. Characteristics for mission profile 3

2.4 Mission Essential Equipment List

During every flight (planned or ad-hoc) one or more missions can be executed. The Mission Essential Equipment List (MEEL) describes all essential mission equipment required for each mission. Failure to comply with this MEEL may lead to cancellation of the intended flight. It is the Mission Commanders (MC) authority to accept an aircraft for the intended flight when the aircraft status is not in compliance with the MEEL for one or more missions to be executed during that flight. If, for example, the radar is found to be inoperative during the preflight for a SAR-mission, the MC can decide to continue the preflight and use that aircraft for SAR although not in compliance with the MEEL. This MEEL is based on the main components of mission equipment. The final MEEL will be determined in close cooperation between the Service provider and the State and depends on the final offered mission equipment suite. This final MEEL shall be accepted by the State during the Critical Design Review.

Every mission can change instantly into a SAR-mission if and when persons and/or vessels encounter an emergency and require immediate assistance. Because of this task, the aircraft is always an "airborne SAR-unit", although the primary mission may be different. This means that after retasking by DCCG to SAR, the crew must be ready to execute SAR and the aircraft should always be equipped with airdroppable liferafts, pyrotechnic signals and marker buoys.

Mission \ Essential equipment	Radar	IR	EO	Autonomous optical detection	MMS and COMMS[2]	Self locating datum marker	Location markers	Marker buoys	Deployable liferaft	Miscellaneous
Search and Rescue	R	R	R	R	R	R	R	R	R	D: P/V
Counter Drugs	R	R	R	R	R	D	R	R	R	R : P/V
General law enforcement	R	R	D	D	R	D	R	R	R	R: P/V
Tactical training	R	R	R	R	R	D	R	R	R	R: P/V
Transport	R	R	D	D	R	D	R	D	D	R: P/V

Table 4. Mission Essential Equipment List (All equipment except communications)
R=Required D=Desired N=Not applicable P=Photo V=Video

Mission	Radio's
Search and Rescue	R: 2 VHF AM, 1 VHF FM, 1 HF, 1 UHF, SATCOM D: 2nd HF, secure voice
Counter Drugs	R: as SAR + secure voice + SATCOM + 401 network
General law enforcement	R: as SAR + secure voice
Tactical training	R: as SAR + secure voice
Transport	R: as SAR + secure voice

Table 5. Mission Essential Equipment List (Communications)
R=Required D=Desired

[2] Mission Management System and Operational Communication (voice and data with JRCC)

2.5 Airport information Curaçao

Runway	11.187 feet length and 197 feet wide, LDA 8.464 feet.
Maximum take-off weight	sufficient for 747 type aircraft
Fuel	F-34, JET A-1
Navigational equipment	ILS, VOR/DME, PAPI
Services	fire protection 9, PPR granted for CD-missions
Specifications	in accordance with Dutch Caribbean AIP

Table 6. Airport information Curaçao

The state will provide the infrastructure of the military part at Curaçao international airport (HATO), set forth in the agreement ANNEX CL- DETAILS OF HOME BASE INFRASTRUCTURE, to the disposal of the Service provider. The Service provider should be aware of the fact that part of the infrastructure will also be used by others, such as other providers of SAR and surveillance capabilities for the DCCG, the crew and supporting personnel of the helicopter of the West Indies Guard Ship (WIGS) under command of the Fleet Commander CZMCARIB, security, general service and DCCG personnel. Incidentally HATO Military Airfield is used by Netherlands and foreign detachments.

3. Requirements

3.1 Introduction

This chapter describes the requirements for the DCCG Fixed Wing capability. Requirements marked as "desired" are related to the quotation phase of the ARC DCCG project as mentioned and graded in the RFQ. Upon contract award to the selected Service provider, the PoR will be reviewed to reflect the final contracted requirements.

3.2 General requirements

The Service provider is responsible for the procurement, installation, certification, qualification, operation, maintenance, repair, replacement and adjustment of the aircraft and related support, mission and safety equipment, either already installed or planned to be installed, for the duration of this agreement. Three years after the aircraft have been delivered, the State determines whether the equipment must be updated due to operational reasons or regulation requirements. Updates will take place via the technical change procedure of Article 13 of the Agreement. The Service Provider shall be responsible for interim updates that are the result of replacement of unserviceable parts (obsolescence) and obligatory modifications resulting from maintenance requirements.

The general requirements are the following:

- The Service provider shall provide the DCCG Fixed Wing capability by using a number of dedicated Dutch (PH) registered aircraft and in an identical configuration of mission and safety equipment to provide a minimum of 2300 to a maximum of 2600 flight hours per year;
- The Service provider shall during the duration of the contract comply with the EASA requirements as laid down in Part-SPO (Specialised Operations) of Commission Regulation (EU) No 965/2012 and NLD MAROPS-1 (distributed separately) in addition thereto. Service provider shall be responsible for audits by an independent body (to be approved by the State) based on Part-SPO and NLD MAROPS-1 every two years and report the results to the State. The results of the audit shall be discussed with the State and be implemented by the Service provider;
- The Service provider shall be willing to operate "due regard" according regulations for state aircraft to execute covert operations with "navigation lights, ADSB and IFF off" in applicable areas;
- All equipment and devices installed must be certified in accordance with the telecommunication legislation of the nation of registration of the aircraft and must meet the EASA requirements;
- All equipment installed shall operate on the aircraft's power system or a Ground Power Unit when the aircraft is on ground;
- All equipment shall function in all environmental and operational conditions that may occur during the missions performed by the aircraft;
- Cooling/ventilation capacity during pre-flight, start up, taxi and inflight shall be such that working temperatures in the cockpit and cabin shall be within acceptable limits;
- Maximum continuous electrical load shall not be exceeded in normal flight when operating all equipment simultaneously;
- To safeguard night operations a separation between cockpit and cabin shall be available to shield the cockpit from cabin lighting;
- The cockpit shall be NVG compatible *(desired)*;
- The Service provider shall be responsible for the continuous availability of pilots, sensor operators and aircraft to be able to meet the 90 minute notice requirement at any time (one aircraft airborne within 90 minutes after first alert). When an aircraft is executing

a planned flight, a second flight crew shall be available on the 90 minutes notice as stand-by.

- The State will be responsible for the continuous availability of all Mission Commanders (MC). Article 17 of the agreement details the procedures in the event the State is unable to provide this continuous availability.
- The State will be responsible for the continuous availability of two (2) sensor operators. Article 17 of the agreement details the procedures in the event the State is unable to provide this continuous availability.
- Service provider shall ensure that all aircrew and maintenance personnel involved is available for, and fully cooperate with, a screening procedure to be executed by the State in accordance with Article 30 of the Agreement
- The Service provider shall ensure a dispatch reliability of more than 98% for Operational aircraft for planned and ad-hoc flights, measured over a twelve month period. Dispatch reliability means that the Operational aircraft shall be able to take off and commence the assigned mission within the allocated time. An aircraft is Operational from the moment that the aircraft is Airworthy (MEL) and Mission (MEEL) ready, all qualified crewmembers are on board of the aircraft, and the aircraft is capable to commence moving at its own power (sufficiently fuelled). For a planned flight a delay in take-off time of maximum 15 minutes is acceptable. The ad-hoc flight shall commence within the mentioned 90 minutes timeframe;
- The Service provider shall ensure a mission reliability, based on the functional status of the aircraft and its systems, of more than 98.5%. Mission reliability means that the aircraft after take-off shall be able to complete the assigned mission as ordered;
- The Service provider is responsible for the provision and serviceability of specific equipment and services as detailed in Attachment B;
- The Service provider shall deliver to the State operational user manuals in English for aircraft, mission and safety equipment;
- The colour of the aircraft shall be painted in a grey tone-down colour on the outside with additional Coast Guard logo's and striping. The final layout is depending on the aircraft type and will be determined in a later stage.

3.3 Detailed requirements for aircraft and aircraft systems

Subject	Requirement	Additional information
Airframe		
Aircraft general		Capacity for 4 crewmembers, Pilot (P), Co-Pilot (CP), Mission Commander (MC), Sensor Operator (SO). To comply with ICAO/EASA legislation. Capacity for transport of passengers and/or cargo, as per item a. of Attachment A.
Cockpit		The cockpit shall be operated as a dual pilot cockpit, fully Visual Flight Rules/Instrumented Flight Rules (VFR/IFR) certified.
Observer stations	Desired	One (1) starboard and one (1) port side observer station, with outward bulged window or equivalent alternative to provide an extended view on the surroundings of the aircraft.
Photo-optical window		One (1) starboard and one (1) port side.
Workstations		2 workstations in the cabin, one (1) for MC and one (1) for SO with outward bulged windows or equivalent alternative to provide an extended view on the surroundings of the aircraft. Workstations described in paragraph 3.4.

Galley	Desired	Refrigerator, oven and coffee/hot water maker.
Toilet		
Toilet	Desired	Vacuum flush toilet.
Aircraft Performance		
Endurance		Minimum of 8 hours. Total amount of fuel including 4 hours at low level (< 1000ft) and required reserve fuel. Based on ISA +20.
Transit speed		Minimum 180 knots.
Search speed		160-220 knots.
Minimal speed		At least 150 knots during patrol.
Maximum speed		Minimum 250 knots.
Cross wind		Cross wind limit at least 25 knots.
Fuel dump	Desired	
Navigation		
Navigation and Flight Management System (NAV/FMS)		Comply with item b. of Attachment A.
Auto pilot		IFR approved Comply with item c. of Attachment A
V/UHF homing device		Capable of homing on all emergency Frequencies for SAR and on all V/UHF channels. Comply with item d. of Attachment A.
Navigation indication	Desired	For situational awareness of the MC and SO.
Communication		
HF		2 sets, comply with item e. of Attachment A.
VHF(AM)		2 sets, comply with item f. of Attachment A.
VHF(FM)		1 set, comply with item g. of Attachment A.
UHF		1 set, comply with item h. of Attachment A.
Secure V/UHF voice communication (LOS)		1 set, comply with item i. of Attachment A.
SATCOM (BLOS)		1 set, comply with item j. of Attachment A.
Stand-alone US401 secure communication		Comply with item k. of Attachment A.
Tactical communication with JRCC		Comply with item l. of Attachment A.
Radio selection panel (RSP)		Each crew position console shall have identical RSP. Comply with item m. of Attachment A.
Internal Communication System (ICS)		ICS shall comply with item n. of Attachment A.
Automatic Identification System (AIS)		Comply with item o. of Attachment A.
Warship W-AIS	Desired	Comply with item p. of Attachment A.
ADSB-in	Desired	Integrated in Mission Management System (MMS)
(Specific) mission equipment		
Radar		Detection of small surface objects moving at speeds form slow to fast at large distances. Search mode and weather avoidance mode. Comply with detection capability as in item q. of Attachment A.

EO/IR		Integrated electro-optics and High Definition infrared detection system, comply with item r. of Attachment A.
Autonomous optical detection	Desired	Comply with item s. of Attachment A
Oil spill detection	Desired	daytime and night-time detection capability of layer thickness and coverage of a pollution (e.g. oil spill) at sea.
Digital camera		Comply with item t. of Attachment A.
Search light	Desired	Controleable from Mission Management System with slew and geolocation lock features in horizontal and vertical plane. Luminance at least 3.5 million Candela.
Location marker		Storage and release of location markers (pyrotechnic signals,smoke markers) from the aircraft by free fall chute or other manual means. Comply with item u. of Attachment A.
Self locating datum marker buoys		Storage and release of SLDMB buoys from the aircraft by free fall chute or other manual means. Comply with item v. of Attachment A.
Tactical display		Comply with item w. of Attachment A.
Mission Management System (MMS)		Comply with item x. of Attachment A.
Workstation in the cabin		Comply with item y. of Attachment A.
Life raft (PIW)		Life raft, capacity must be for 8 persons. Comply with item z. of Attachment A.
Life raft (Crew)		2 rafts, capacity must be for 7 persons (crew) per raft, to comply with item aa. of Attachment A.
Droppable canister	Desired	Must be able to drop a canister (same size as droppable raft) containing spareparts.

Table 7. Detailed requirements for aircraft and aircraft systems

3.4 Minimum Qualification requirements for pilots

Coastguard missions can vary from "routine-like" flights, such as transportation, to special flight operations, such as low level operations at night in covert circumstances. Consequently only highly trained and qualified personnel will be able to carry out such missions in a safe and responsible way.

A typical environment for Coastguard missions is at night, low (VFR minima) and above sea. CD-ops are highly operational and tactical.

According to applicable legislation and regulations all pilots shall have a Commercial Pilot License (CPL) with Instrument Rating (IR) and Type Rating on the aircraft. To execute the position of captain of the aircraft shall have an Aircraft Transport Pilot License (ATPL).

3.5 Aircrew maritime training

In addition to the requirements above, pilots and other aircrew shall be qualified to execute the maritime air surveillance tasks as described in Chapter 2. This encompasses the following skills and proficiencies for day and night flights to be trained under the

responsibility of the Service provider prior to the initial DCCG Fixed Wing capability acceptance and prior to assignment of replacement crew for DCCG operations after FOC of the capability:

- Low level training;
- Approach of contacts followed by photo- and video runs;
- Search-patterns;
- VFR night-flying operations (unaided);
- Crew Resource Management;
- Ditching procedures;
- Maritime survival and dinghy drill.
- Mission equipment training.

3.6 Mission training

For future crewmembers, the State will provide mission training and all other general DCCG procedures. Documentation will be delivered by the State.

Topics to be addressed are e.g.:

- Counter drugs- and Coast Guard operations;
- Tactical crew coordinating skills with MC and sensor operator;
- Overt and Covert operations;
- Recognition (ship/aircraft);
- Handover procedures;
- Working in a combined scene of action with several aircraft, helicopters and ships;
- Radio procedures maritime and SAR;
- Diplomatic clearance rules (civilian A/C) in the regional AOR;
- Intercept procedures (COI/GF).

The State will produce a training plan that might include flights where the above mentioned skills are trained in the operational environment. The mission training might be concluded with a performance evaluation flight that will be judged by State personnel.

3.7 Restrictions in the use of hazardous substances requirements

The use of environmentally hazardous material shall be avoided. The term "use" is meant in the widest sense, ranging from use as an operational material or means of maintenance to the use as construction material for the vehicle or its components. The list of banned and restricted substances is enclosed as Attachment C. The list is subdivided into nine categories (see table 9).

Group	Category
1	Industrial chemicals, used for the maintenance of equipment
2	Fire-extinguisher
3	Corrosion prevention
4	Electronics / lighting
5	Textiles, clothing, personal equipment and shoes
6	Refrigerants
7	Radioactive sources
8	Ammunition
9	Nano materials

Table 8. Categorization of use and/or substances

The Service provider shall inform the State in writing that he will NOT use any hazardous substances, which have been banned under the restriction categories 1A, 1B, 1C, and/or 2A, as indicated in Attachment C.

If the Service provider intends to use substances and/or materials within the restriction categories 1D, 2B and/or 3A, he shall inform the State in writing.
The Service provider shall actively support the State in his search for an alternative less hazardous – substance of restriction 2B.

The ban to use the hazardous substance / obligation to register the use of the hazardous substance is not valid if the maximum allowed level and/or detection level, mentioned in the appropriate table, has not been exceeded. When the assets reaches the ELOT, the Service provider is obliged to dispose and / or destroy them in accordance with the then applicable standards, regulations and legislation.

4. Miscellaneous project issues and requirements

This chapter describes the organization structure, communication matters, maintenance and other issues (desired requirements) necessary to achieve a high standard of service during the agreement period.

4.1 Project organization

The State will assign a program manager (as mentioned in agreement article 21 – REPRESENTATION). After aircraft acceptance, the role of program manager will be transferred to DCCG who will represents the State in all matters concerning the agreement, except in the events that are outside the intent of this agreement. The Service provider shall assign a Project Manager (PM). The Service provider shall also assign a representative in the Operational Team (OT). The OT is responsible for the coordination of the flying activities (planned and ad-hoc) and the day-to-day operations with the aircraft. The State will coordinate and will be the chairman of the OT.

Tasks of the OT will be (at least):
- to issue a periodical (4 week) provisional planning of all flights (operational and training);
- the acceptance of periodical (4 week) maintenance planning;
- the evaluation of periodical (4 week) executed flights, maintenance and the registered (logbook) remarks and complaints.

Tasks for the Service provider are, with regard to the project organization, at least:
- to issue a specified yearly and periodical (4 weeks) maintenance planning;
- to issue reports with regard to deferred defects for each flight;
- to report periodically (4 weeks) about the execution of all flights, maintenance and accumulated flight hours in relation to the yearly planning;
- to report risks to DCCG with regard to the way these risks influence the operational use of the aircraft.

4.2 Crew responsibilities

The Pilot In Command is responsible for flight safety. The Mission Commander (tactical crew) is responsible for the execution of the mission. If there is a conflict between flight safety and mission, flight safety always overrules mission accomplishment.

4.3 Maintenance

Maintenance shall be carried out in accordance with the requirements of the Type Certificate Holder, under an EASA maintenance organization certificate and under an EASA or equivalently recognized civil aviation authority .

Additional maintenance tasks shall be carried out as deemed necessary by the Service provider in order to guarantee the dispatch and mission reliability requirements.

4.4 Systems Engineering, qualification and initial acceptance

The Service provider shall use the system engineering process (V-model) to come to a final design.

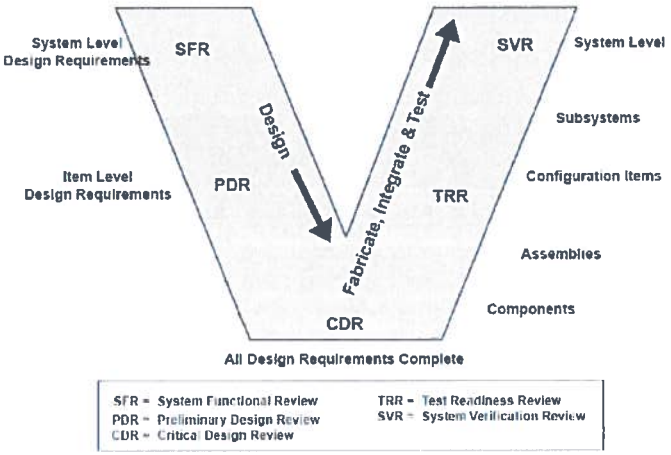

Figure 2. Systems engineering and verification

The Service provider shall be responsible to qualify the aircraft and all sub-systems integrated into the aircraft and demonstrate the compliance of the final configuration under all specified conditions. Therefore the Service provider shall make a proposal for a qualification program. All activities shall be determined and approved in consultation with the State.

The Service provider shall deliver a qualification process plan (Annex J of the Contract), which shall describe the qualification process, and shall be the basis for the qualification of the aircraft. The Service provider shall demonstrate that the aircraft configuration in the final design configuration complies with the requirements in this PoR.

The Service provider shall be responsible for all planning/meetings/logistic/facility reservations activities, to undertake a specific qualification test. The Service provider shall deliver all documentations/calculations/assessments/reports for all qualification activities in the English language.

Compliancy statements for all qualification activities shall be determined and approved in consultation with the State. The Service provider shall invite the State to witness all qualification testing activities. The State shall formally inform the Service provider for attending as a witness for a specific qualification test. Only when the State formally inform the Service provider that there will be no witness, the Service provider may go on with a specific qualification test. The State shall be free to determine which expert will be attending as a witness by a specific qualification test. This can also be a third party.

The System Verification Reviews (SVR) shall be conducted by the Service provider prior to delivery of the first aircraft.

Prior to each SVR the Service provider shall present the Test Plan (TP) to the State for approval. Prior to each SVR a Test Readiness Review (TRR) shall be conducted under the responsibility of the Service provider. The State approves the TRR prior to the conduct of the test. After each SVR the Service provider shall prepare a Test Report (TR) and present it to the State for approval. The systems engineering process shall be concluded in an overarching Qualification Review (QR) acceptable to the State.

Before starting the delivery of the series, the Service provider shall perform a Factory Acceptance Test (FAT). In the FAT the Service provider demonstrates that each aircraft in its final configuration as part of the series production conforms to the requirements, specifications and documentation.

Final aircraft acceptance, including cockpit-, mission-, safety equipment, operational and maintenance crew as well as aviation safety certification and processes shall be based on an Acceptance of compliance Test Procedure (ATP) (as mentioned in agreement article 12 – VERIFICATION). The ATP shall describe all tests necessary to demonstrate the compliance to the requirements in the operational environment.

The ATP will contain at least the following information:

- how and when acceptance tests shall be performed;
- the authorities who are involved;
- test conditions;
- the way in which results shall be recorded;
- the procedure for repair of failures.

Failures are recorded in a test log, indicating the period in which failures must be repaired. After completion of the ATP, the test log must be signed by the State and the Service provider. If, during the ATP, failures turn out to be such that further testing would give unreliable results, the ATP shall be stopped and failures must be repaired prior to continuation of the ATP. After the failures have been repaired, the acceptance tests concerning that particular system or item shall be performed once more.

4.5 Evaluations

Mission equipment status and in particular equipment failures shall be recorded daily by the crew in a logbook provided by the Service provider. The State's program manager shall have full disclosure of the logbook upon request and the intended corrective actions and timelines to rectify the equipment failures.

The program manager shall be able to assign State personnel to observe missions on-board the aircraft with the aim to evaluate mission effectivity and performance of the Service provider.

Attachment A ***Equipment description***

a. Transport capacity

Parameters	**Characteristics**
10 seats in aircraft and storage facility for cargo	transport between ABC and SSS islands (return flight without fuelling and taken into account reserve fuel and alternate airfield to meet legal requirements) for ten passengers and 500 kg cargo, or a combination of passengers and cargo to a maximum of 1500 kg.
Desired	Additional 10 seats in aircraft and storage facility for cargo considering transport between ABC and SSS islands (return flight without fuelling and taken into account reserve fuel and alternate airfield to meet legal requirements) for twenty passengers or 1500 kg cargo, or a combination of passengers and cargo to a maximum of 1500 kg.

b. Navigation and Flight Management System (NAV/FMS)

Parameters	**Characteristics**
Requirement	Flight Planning Mode with data insertion via a separate PC. Driven by GPS and VOR/DME. GPS accuracy; maximum 0.5NM. RNP 5. Three Control Display Navigation Units (CDNU's) at both pilots and MC's position enable those positions to manage the FMS, execute search patterns (e.g. expanding square, ladder search and sector search, barrier search) and to monitor navigation and search pattern integrity. Coupling between AP and NAV/FMS search patterns and flight plan FMS PC interface present for data up/download by handheld PC.

c. Auto pilot

Parameters	**Characteristics**
IFR conditions	approved for missions under Instrument Flight Rules (IFR) conditions

d. V/UHF homing device.

Parameters	**Characteristics**
Frequency	Scan emergency channels 121.5, 156.8, 243.0 and 406.025 MHz. Able to transmit and receive on all VHF/UHF frequency bands. When homing on one channel the other channels must be available for monitoring.

Indications	relative bearing and signal strength

e. HF radio

Parameters	**Characteristics**
Frequency range	2-30 MHz
Memory	at least 20 channels
Adjustment	to tenths of kHz
Range	Typical range under standard Caribbean conditions during daylight at least 750 Nm.

f. VHF AM radio

Parameters	**Characteristics**
Frequency range	30-87.975 MHz, 108-156 MHz
Memory	at least 20 channels
Spacing	8.33 kHz
Range	at least 50 Nm

g. VHF FM radio

Parameters	**Characteristics**
Frequency range	156.000-174.000 MHz
Memory	all maritime channels (including 16,67 and 73) and at least 2 private channels (96 and 97 high)

h. UHF radio

Parameters	**Characteristics**
Frequency range	159-399.95 MHz
Memory	at least 4 channels
Range	at least 50 Nm

i. Secure voice communication (LOS)
This radio is to provide secure LOS communications between DCCG units. Motorola DM4000 series is the DCCG standard set installed in DCCG units so the installed secure set shall be of the DM4000 series or either fully compatible with this series of radios. Frequency range shall be between 138-174, 403-470,450-520, 806-870 MHz. Power requirement is 5W as a minimum.

j. SATCOM (BLOS communication)
Two SATCOM-radios shall be installed in the aircraft (one active, one hot backup) and shall be used for voice, data & video-transmissions. Data and video transmission shall be controllable from the MC and SO workstations through the Mission Management System.

k. Provisions for US 401 secure communication.
In order for the aircraft to operate in a US 401 secure network during certain operations, an external antenna plus wiring and integration of controls and voice (R/T) into the MC station as "provisions for" an occasional installation of a US 401 radio (GFE) is required.

l. Tactical communication with JRCC
Datalink with the following capabilities, controllable on Mission Management System:
a) Encryption of datalink (DL) transmission
b) DL IP-based
c) LOS DL and BLOS DL chat function
d) LOS DL frequencies i.a.w. State
e) LOS DL transmit broadband information (near) real-time
f) BLOS DL use the SATCOM-radios
g) BLOS DL able to T/R broadband information (near) real time
h) LOS T/R-unit for the MOC
i) Default selection setting LOS used for communication, automatic backup by the SATCOM
j) It shall be possible to prepare transmissions jobs, transferred when a/c reconnects to the network
k) Two queues shall be maintained: one for only LOS-connections and one for BLOS/LOS (whichever is available)
l) Selective addressing of the aircraft
m) LOS effective bandwidth 5 Mbps or more
n) LOS range 50 nm when flying 1000ft MSL
o) Selection of which DL (LOS or BLOS) to use shall be automatic, option for operator to overwrite the selection

m. Radio Selection Panel
Each crewposition (P/CP/MC/SO/OBS) must have the possibility to select and receive 0, 1 or a selection of the COMMS radios at the same time and be equipped with an Internal Communication System (ICS) to communicate with all other stations in the aircraft. Pilot, Co-pilot, Mission Commander and sensor operator must be able to transmit with each radio.

n. Internal Communication System (ICS)
It shall be possible to separate ICS in the cockpit from ICS between MC, sensoroperator and observer stations. All voice over the ICS shall be able to be recorded on/off selectable for the mission duration.

o. Automatic Identification System (AIS)
The aircraft shall be equipped with an AIS receiver for the determination of position, identity, tracking, speed, next port of call, call-number and other information (dangerous goods, owner) of vessels equipped with a transponder. The system shall be fully integrated with the mission management system with a blending of AIS contacts with radar contacts.

p. Warship Automatic Identification System (W-AIS)
Determination full message transponding and reception including position, identity, tracking, speed, of DCCG units equipped with a transponder. The W-AIS functionality shall be integrated in the Mission Management System.

q. Radar

The radar is primarily used for detection of small, fast or slow moving surface contacts in a high sea state and high sea clutter environment at ranges varying between less than 10 NM all the way up to 40 NM. Secondarily, the radar is used to establish the presence and volume of all types of shipping in a particular area, thereby aiding in the execution of SAR scenario's, General Law Enforcement and Environmental Control.

For covert performance it is required that the optimal detection probability, on small slow moving sea vessels, is possible at altitudes of 6000FT and higher.

Parameters	**Characteristics**	
Coverage	360 degree radar with approximately 360 degree unobstructed coverage.	
Modes	Search mode, weather avoidance mode, Dynamic ISAR mode (Inverse Synthetic Aperture Radar), Moving target indication (MTI).	
Stabilization	Continuous tracking of radar contacts during Rate 1 Turns (ROT).	
Detection capability	Minimum ranges in scanning mode, a/c at required altitude, sea state 3 and with 90% probability of detection operating at an altitude of 5000 ft.	
	Radar Cross Section (m^2)	Range (Nm)
	1	30
	10	50
	100	80
Desired	1. Air to air mode	
	2. Hardware and software integrated IFF interrogator on civil IFF modes	

r. EO/IR

Parameters	**Characteristics**
Sensor	Full HD Multi-Sensor – Multi Spectral Imaging System Full HD Thermal Imager 3-5 micron range, Full HD daylight (optimized for the Caribbean area)
Field of view	Minimum two selections, small and large.
Azimuth	360 degrees unobstructed slew coverage.
Turret	Retractable or equivalent method of lens protection
Auto tracking	auto track and auto scan functionality included
EO/IR control and presentation on screen	Master controllable by Sensor operator and slave controllable at Mission Commander position. Presented on Mission Management System with slave on FMS at pilot and co-pilot position.
GPS position	GPS position, date and time info on at least operator station console and visible on all recordings and still images.
EO/IR data recording 1	EO/IR video data including GPS position, date and time recorded in digital (MPEG) format with a minimum of 8 hours HD storage time. The used format/container and codec must remain compatible with commonly used hard- and software for at least

	the contract duration period. Replay while recording possible.
EO/IR data recording 2	EO/IR still image data including GPS position, date and time recorded in digital JPEG format.
Slewing	Slewing of EO/IR sensor on radar, AIS and/or mission system contacts. Slewing in both bearing and azimuth
Desired	1. Multispectral/LL SWIR sensor in the 1-3 micron range.
	2. Optical spotter-scope daylight and low light spotter (due to dusk/dawn). 1080p or higher.
	3. Sensor must be able to combine, overlay and display the different sensor pictures.
	4. Full digital image blending: combine HD IR, colour, and SWIR spectral information for enhanced results essential in single video channel downlink

s. Autonomous optical detection
Autonomous optical detection capability to assist the flight crew in optical search for objects on the sea surface.

Parameters	**Characteristics**	
Tilt	+10 to –90 degrees	
Coverage	180 degrees (90 degrees left and right of a/c nose)	
Control and presentation on screen	Controllable by Sensor Operator and Mission Commander. Presented at Mission Management System.	
Detection capability	Capability to detect objects at 1000 ft flying altitude with sea state 3 and with 90% probability of detection at an search speed of 200 kts.	
	Objects	Range (Nm)
	Persons in Water	1.5
	Liferaft	3.5
	20 feet fast boat	7.5
Automated optimal search patterns	Inclusion of optimized automated search patterns in NAV/FMS search pattern modes.	
Slewing	Capability to slew the EO/IR sensor to the object as detected by this autonomous optical detection capability.	

t. Digital camera

Parameters	**Characteristics**
Digital photo camera	Digital photo camera for the purpose of collecting still imagery of targets of interest. Minimum full frame 20.8 megapixel CMOS sensor. Minimum camera lens focal length range 18-400 mm.
Integration in Mission Management System	Camera to be provided with aircraft position feed and to include position information on photo; Photo output (near) real time to Mission Management System.

u. Location markers
The aircraft shall have a capacity to store and release location markers (pyrotechnic signals, smoke markers) to mark any position via a free fall chute, an open door or other system.

Parameters	Characteristics
Release from a/c	Manual
Storage Capacity	A minimum of 6 location markers must be stored and readily available for each mission
Desired	1. automatic release upon activation from Mission Management System.

v. Self locating datum marker buoys
The aircraft shall have a capacity to store and release SL-DMB drift buoys in order to determine sea current.

Parameters	Characteristics
Release from a/c	Manual
Storage Capacity	A minimum of 3 SL-DMB buoys must be stored and readily available for each mission
Desired	1. automatic release upon activation from Mission Management System.

w. Tactical display
Showing (WX)radar, EO/IR, (W)AIS, map, tactical picture, pilot or operator selectable.
Pilots shall be able to show and select:
a) Source;
b) Orientation;
c) Range and display of relevant symbols;
d) Proposal for changes in flight plan/route;
e) Accept or deny changes in flight plan/route.

x. Mission Management System (MMS)
Mission Management system featuring:
a) Digital nautical map, nautical information, aviation features, tactical data;
b) Detailed land chart, switchable between standard presentation view with street names and pre-imported satellite image overlay, and air data/aviation features;
c) Area: As described in paragraph 1.2. of this Programme of requirements;
d) Scales between 1:2.000.000 and 1:4000;
e) Various layers, separate (de)-selection of depths, depth contours, navaids, buoys, wrecks, lights, territorial waters, area of operations. ;
f) Display, filtering and colour coding of all type AIS contacts;
g) Automatic detection and indication of Vessels of Interest, uploaded on the MMS before the mission or manually entered during the mission;
h) Selection of AIS contacts by ENI-number;
i) AIS silent and active mode, operator selectable, encrypted use;
j) Database waypoints;
k) Easy waypoint insertion and activation;
l) Route calculation;
m) Digital drawing;
n) Pre-programmed search area's/patterns;
o) Database tracks (old and present);
p) Various cursor-options;

q) Real-time readout time, COG, SOG, dist. to WP;
r) Access via rollerball/mouse/keyboard;
s) Horizontal and vertical slewing of EO/IR on radar, AIS, Autonomous optical detection and/or mission system contacts;
t) Horizontal and vertical slewing of searchlight on EO/IR, radar, AIS, Autonomous optical detection and/or mission system contacts;
u) LAT/LONG readout and insertion;
v) Actual updates of all charts;
w) Easy data-exchange to download/upload between aircraft and ground system;
x) Ship database;
y) Able to transmit/receive user-defined standard reports;
z) Store, export and replay function in HD, picture of screen, clips, annotate video, export;
aa) Sensor data recorded HD for 8 hours or more on removable media. The used format/container and codec must remain compatible with commonly used hard- and software for at least the contract duration period;
ab) Camera footprint on MAP & ND;
ac) Map symbols & restricted areas on radar;
ad) Presentation of TCAS-data;
ae) Export of information shall include formats i.a.w. STANAG 4609 for video (including KLV), and for still imagery JPEG and STANAG 4545 (including precise image coordinates).

y. Workstations in the cabin

A workstation consists of a work-console, adjustable chair and required equipment. The layout of the workstations must be ergonomic and in accordance with the following requirements:

a. The cabin shall be equipped with two equal multifunctional consoles for the Mission Commander (MC) and for the sensoroperator (SO) both with the same controllability of the sensors and the radios;
b. The tactical display and MMS functionalities shall be integrated in the consoles;
c. Indication of Barometric Altitude, Radar Altitude, True Airspeed and groundspeed shall be separately available on each console;
d. Each console shall have the capability to select and display all sensor and mission system views, duplicated from the other;
e. Each console shall have the capability to display geographical charts of the Caribbean area. The aircraft should be displayed on the chart as a moving symbol, using input from the (D)GPS. The operator shall be able to insert symbology, such as text, lines and circles. It shall be possible to upload preflight mission data, save actual mission data on disk and retrieve the mission data after the mission for analysis;
f. Each console shall have a clock, an ICS-system and adjustable lighting;
g. Each console shall have a graphic colour display (minimum 19 inch) with adjustable brightness for day/night;
h. Each console shall have a horizontal A2 sized desktop for use with a normal chart;
i. Operation of consoles should be according to Windows look and feel, the mouse control being replaced by a trackball having 3 (quick)keys;
j. Each console shall have storage-room for an A4 size file;
k. Each console shall have a coffee cup holder and storage for loose equipment, flight-bags, books and maps.

z. Life raft (PIW)

Parameters	**Characteristics**
Requirement	The aircraft shall be able to manually deploy a self-inflating life raft in order to rescue PIW's. Raft equipped in accordance with SOLAS-regulations for a

	minimum of 8 persons. EPIRB 406 MHz available in raft.
Desired	1. automatic release upon activation from Mission Management System.
	2. a second droppable liferaft shall be ready for release in case the first one fails or can't be reached by the PIW's.

aa. Life raft (crew)

Two crew life rafts, one on either side of the aircraft. Each life raft must be able to contain the entire crew (maximum 7 persons). Rafts equipped in accordance with SOLAS-regulations. EPIRB 406 MHz available in each raft.

Attachment B ***Responsibilities for the provision of specific equipment between State and Service provider***

In order to clearly define the responsibilities between State and Service provider for the provision of operational equipment, support equipment, safety equipment and training, the following equipment shall be provided by the Service provider for use and/or participation by the State.

Aircrew Equipment & Gear	**Specification**	**Service Requirement**	**Total Units**	**Note**
A. Noise Cancellation headphones for ICS and radio communications	COTS	Provision of initial stock, warehousing, servicing and replacement during full contract period	Minimum of 12 units: 5 x TACCO; 2 x SO; 5 x DCCG STAFF). Shall be part of the personal equipment of individual DCCG members	
B. Aircrew Flotation / Survival Vest	CO2 inflated primary bladder, back up bladder, integrated extraction harness, MOLLE pocket mounting system; Integrated water activated emergency light	provision of initial stock, warehousing, servicing and replacement during full contract period	Minimum of 12 units: 5 x TACCO; 2 x SO; 5 x DCCG STAFF). Shall be part of the personal equipment of individual DCCG members	
C. Aircrew Sea Survival Kit (Stowable in integrated survival vest MOLLE fitted pockets)	Individual kit content (at least or equivalent): 01 x Waterproof PLB 406/121.5MHz (+36 hours battery life); 01 x survival knife with integrated belt cutter; 01 x small waterproof flash light; 01 x pyro day/night marker; 01 x Israeli bandage; 03 x break light; 03 x pencil flare; 1 x 48 hours medication against sea sickness; signal mirror; signal whistle; 3 x 100ml Emergency	provision of initial stock, warehousing, servicing and replacement during full contract period	Minimum of 12 units: 5 x TACCO; 2 x SO; 5 x DCCG STAFF). Shall be part of the personal equipment of individual DCCG members	

	Drinking Water pouch.			
Mission Equipment				
B. Self Locating Datum Marker Buoys (SL-DMB)	In conformity with Attachment A	provision of initial stock, warehousing, servicing and replacement during full contract period. Satellite communication contract and monitoring software to be included	Estimated yearly operational requirement: 20 units	Operational requirement does not account for mandatory or company training and/or pilot standardization
C. Location Markers (pyrotechnic signal)	In conformity with Attachment A	provision of initial stock, warehousing, servicing and replacement during full contract period.	Estimated yearly operational requirement: 120 units	Operational requirement does not account for mandatory or company training and/or pilot standardization
Support Equipment and Provisions				
A. All required maintenance and support equipment for sustaining required platform and flight operations, ground and in flight training.	E.g. but not limited to: Auxiliary airco unit, GPU, tugs, pushbacktractor, maintenance stands / ladders, maintenance and service equipment, tool storage, reserve stores, etc. Office supplies and IT hardware.	provision of initial stock, warehousing, servicing and replacement during full contract period.	N/A	Supplied by the State: , Aircraft Hangar; corporate and maintenance office space, storage space, kitchen, shower and laundry facilities, crewroom, (all this within the available and existing infrastructure of the DCCG AIR STATION); office furniture (limited to chairs, desks and cabinets); availability of landline telcom and internet connection; public

				utilities and facilities; cleaning services and security as required by the State; Airfield, work space and ramp emergency and safety installations and equipment as required by authorities.
Initial and (Re)Current training				
A. Initial Training for DCCG Tacco's and Sensor Operators	In flight and on ground emergency procedures, standard aircraft operating procedures, aircraft familiarization and equipment training	The Service provider shall develop a training program including all documentation and training manuals, shall act as custodian of the module, provide updates as required and facilitate availibility of the training program during the full contract period.	Scheduling of the module shall be available for all DCCG appointed Tacco's and Sensor Operators during the full contract period	The state shall provide follow up training for mission qualification for all Tacco's during the contract period
B. Survival and Egress Training	Sea Survival training (pool drill) and emergency egress training	The Service provider shall facilitate initial and recurrency training in accordance with prevailing regulations	All aircrew	
C. Recurrency Crew Resourcement Management		The Service provider shall provide recurrency CRM training in accordance with prevailing regulations	All aircrew	The state shall provide initial CRM-training for applicable DCCG-personnel

Attachment C Banned and Restricted Substances

This Attachment consists of 2 parts:
Procedure English (April 2015)
List (March 2018)

Date of publication: April 2015

RESTRICTIONS IN THE USE OF HAZARDOUS SUBSTANCES IN EQUIPMENT AND CONSUMABLES - Procedure

1. Introduction

1.1. When formulating the technical requirements for the procurement of equipment and consumables, the Defence Materiel Organisation (DMO) also takes the health, safety and environmental requirements into account. These last requirements have to cover the entire lifecycle from procurement, use until disposal.

1.2. When (potential) Service providers or manufacturers are being contacted by the DMO, the DMO informs them on the restrictions in the use of hazardous substances. The reasons for these restrictions can be as follows:
   a. Ban or limitation on (certain) uses of hazardous substances;
   b. Hazardous substance is mentioned on a priority list;
   c. Emission of hazardous substances;
   d. Radiation;

2. Categories of uses and hazardous substances

2.1 In order to put restrictions to the procurement of hazardous substances, the DMO has publicised list of "Banned and Restricted Substances", summarised "The List". The list is divided in a total of ten categories, based on uses as well as on limitations originating from law or the MOD's internal regulations.

2.2 The list has the following categories of uses and/or substances:
   1. Industrial chemicals, used for the maintenance of equipment;
   2. Fire-extinguisher;
   3. Corrosion protection;
   4. Electronics / lighting;
   5. Textiles, clothing, personal equipment and shoes;
   6. Refrigerants;
   7. Radioactive sources;
   8. Ammunition;
   9. Nano materials;
   10. Biocides
   11. Asbestos.

2.3 The List has the following list of restrictions:

1A. The legislator has issued a generic ban for the use of the hazardous substance;
1B. The legislator allows the use of the hazardous substance for a specific described purpose. The legislator has issued a ban for all other – not described - purposes.
1C. The legislator has issued a ban for the use of the hazardous substance.
The state can request the competent authority for an (specific) exemption. The state is reluctant to apply for an exemption and will only apply for an exemption when no alternatives are available.
The competent authority can issue (specific) requirements to the exemption;
2A. The state does not allow the use of the hazardous substance. Sufficient alternatives are available;
2B. The state discourages the use of the hazardous substance. In case the Service provider has to use the substance in equipment, he has to inform the contract manager in writing:
- Which alternatives have been investigated;
- What is the reason, that he has not chosen one of the alternatives;
- Where the substance is present in the equipment

3A. The state registers the use of the hazardous substance. The contract manager from the DMO reports the use of the hazardous substance in the Environmental and Occupational Health and Safety chapter of the Introduction manual.

2.4 The ban to use the hazardous substance / obligation to register the use of the hazardous substance is not valid if the maximum allowed level or detection level mentioned in the appropriate table has not been exceeded.

2.5 When a Service provider tenders for a contract, he has to inform the responsible manager of the DMO in writing:
- That he will not use any hazardous substance, which has been banned under the restriction categories 1A, 1B, 1C and/or 2A;
- Which consumables and or components contains one or more substances of restriction 2B and their intended use. The Service provider has to actively support the responsible manager within the DMO in his search for an alternative - less hazardous – substance of restriction 2B;
- Which consumables and or components contains one or more substances of restriction 3A.

2.6 The responsible manager will make a risk assessment on the basis of the supplied information. The result of this risk assessment will be as follows:
- The tender may be turned down, when the offered consumable / equipment contains one or more hazardous substances of the restriction category 1A, 1C and/or 2A.
In case the responsible manager intents to accept the tender, he has to apply for permission from the Central Staff (category 1A, 1C) or Managing Director of the DMO (category 2A);
- The presence of substances of category 2B will be assessed during the evaluation of the tender.

RESTRICTIONS IN THE USE OF HAZARDOUS SUBSTANCES IN EQUIPMENT AND CONSUMABLES - List

This publication on restrictions in the use of hazardous substances in equipment and consumables is part of the Netherlands Ministry of Defence (NLD MOD) policy on Health, Environment and Safety (HE&S). This publication is part of the Ministries publication MP 12-100.

Annex 1:Operating chemicals;

Substance / product	CAS no.	Measure	Legislation	Restriction category
Benzene	71-43-2	Legislation permits use as a component of motor fuels	Directive 98/70/EG	1B
Benzene	71-43-2	Legislation prohibits use for all other purposes. Upper limit may not exceed: 0,1 % by weight	REACH Regulation, annex XVII, section 5 (Regulation 1907/2006/EC).	1A
Chloroparafines (C10 – C13)		Legislator prohibits use in metal working fluids.	REACH Regulation,Candidate list annex XIV (Regulation 1907/2006/EC)	1A
		MinDef does not allow the use in lubricants, Upper limit may not exceed: 0,1 % by weight	REACH Regulation,Candidate list annex XIV (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.4	2A
Organotin compounds: - Tributyltin - Trifenyltin - Tributyl(vinyl)tin - Azocyclotin - Fentinhydroxyde - Trifenyltinacertate	 688-73-3 36643-28-4 7486-35-3 41083-11-8 76-87-9 900-95-8	Legislation prohibits use in antifouling paint.	REACH Regulation, annex XVII, section 20 (Regulation 1907/2006/EC)	1A
Cybutryne	28159-98-0	MinDef discourages use in anti-fouling paint	International Convention on the Control of Harmful Anti-Fouling System on Ships	2B
Mercury compounds		Legislation prohibits use in antifouling paint. .	REACH Regulation, annex XVII, section 18 (Regulation 1907/2006/EC)	1A
Fenylmercuryacetate Fenylmercurypropionate Fenylmercury-2-ethylhexanonate Fenylmercuryoctonate	62-38-4 103-27-5 13302-00-6 13864-38-5	Legislation prohibits use in mixtures. Upper limit may not exceed: 0,01 % by weight.	REACH Regulation, annex XVII, section 62 (Regulation 1907/2006/EC)	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Fenylmercury-neodecanoate	26545-49-3			
Cobaltchloride	7646-79-9	MinDef does not allow use as a medium for drying.	REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC)	2A
Lead compounds: Among others Leadcarbonate Leadsulfate	 598-63-0 7446-14-2	Legislation prohibits use in paints.	REACH Regulation, annex XVII, section 16 and 17 (Regulation 1907/2006/EC)	1A
Silica crystalline; Quarts Cristoballite Tridynite	 14808-60-7 14464-46-1 15468-32-3	MinDef discourages use in paint, sealants and the like.	Health & Safety Decree, chapter 4, article 4.4 CLP Regulation, annex I, chapter 3.5 (Regulation 1272/2008/EC)	2B
Glycol ethers - 2-ethoxyethanole - 2-ethoxyethylacetate - 2-methoxyethanole - 2-methoxyethylacetate - 2-methoxypropanole	 110-80-5 111-15-9 109-86-4 110-49-6 1589-47-5	MinDef discourages use as solvent	Health & Safety Decree, chapter 4, article 4.4	2B
- Nonylphenol - Nonylfenol/ethoxylates - 4-para0nonylphenole - Octylfenol - Para-tert-octylfenol - 2,4,6-tri-tert-butylfenol	25154-52-3 (84852-15-3) 9016-45-9 104-40-5 1806-26-4 140-66-9 732-26-3	MinDef discourages use in paint	REACH Regulation, annex XVII, section 16 and 17 (Regulation 1907/2006/EC)	2B
Chlorinated hydrocarbons, used as a solvent: Hexachloroethane Pentachloroethane 1,1,1,2 Tetrachloroethane 1,1,2,2 Tetrachloroethane	 67-72-1 76-01-7 630-20-6	Legislation prohibits use	Directive 76/769/EC	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
1,1,2 Trichloroethane Trichloroethane Trichloromethane 1,2-Dichloroethane 1,1-Dichloroethylene Trichloorbenzene	79-34-5 79-00-5 79-01-6 67-66-3 107-06-2 75-35-4 120-82-1			
Other chlorinated hydrocarbons		MinDef discourages use	Health & Safety Decree, chapter 4, article 4.4	2B
2-Naftylamine and it's salts Benzidine and it's salts 4-Nitrobifenyl 4-Aminobifenyl, xenylamine and it's salts	91-59-8 92-87-5 92-93-3 92-67-1	Legislation prohibits use.	REACH Regulation, annex XVII, section 12 untill 16 (Regulation 1907/2006/EC)	1A
Hydrochlorofluorcarbons HCFC's), used as solvent.		Legislation prohibits use.	Regulation on substances that deplete the ozone layer (Regulation 1005/2009/EC)	1A
Dichloromethane	75-09-2	Legislation prohibits use as paintstripper.	REACH Regulation, annex XVII, section 59, (Regulation 1907/2006/EC)	1A
Volatile Organic Substances (VOS)		According to law, a paint system to be applied to military equipment may not contain quantities of the following volatile organic substances in excess of those specified hereafter (based on the ready to use product): • Pretreatment: 850 g/l • Surface cleaning: 200 g/l • Putty, filling 250 g/l • Surfacer/sealer 540 g/l • General (metal)primers: 540 g/l	Directive 2004/42/EC	1B

Substance / product	CAS no.	Measure	Legislation	Restriction category
		• Wash primers: 780 g/l • Water-based paints: 140 g/l • High solid paints: 420 g/l • Finish coatings: 420 g/l • Special coatings for munitions and other military equipment: 840 g/l Volatile organic substances* are hydrocarbons with a vapour pressure > 0,01 kPa (0,1 mbar).		
Cadmium	7440-43-9	Legislation prohibits use in coatings Upper limit may not exceed 0,01 % by weight	REACH Regulation, annex XVII, section 23, (Regulation 1907/2006/EC)	1A
Substances, mentioned in annex XIV of the REACH Regulation		Legislation prohibits use in substances and mixtures, unless an authorisation has been granted	REACH Regulation, annex XIV (Regulation 1907/2006/EC)	1A
CMR-substances.		According to law, the use of carcinogenic, mutagenic and/or reprotoxic substances is prohibited, in case a technically suitable alternative is available. Upper limit may not exceed; 0,1 % by weight.	REACH Regulation, annex XVII, section 28, 29 and 30 (Regulation 1907/2006) Health & Safety Decree, chapter 4, article 4.17 (Regulation 1272/2008/EC) CLP Regulation, annex I chapter 3.5, 3.6 and 3.7 (Regulation 1272/2008/EC)	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Substances classified as acute toxic and/or suspected CMR.		MinDef discourages use of substances, classified by CLP Regulation as H 300, H301, H 310, H 311 and/or H 330, H 331 respectively H 341, H 351 and/or H361. Upper limit may not exceed: - H 300, H 301, H 310, H 311, H 330, H 331, H 351, H 361: 0,1 % by weight - H 341: 1 % by weight.	Health & Safety Decree, chapter 4, article 4.4 CLP Regulation, annex I chapter 3.1, 3.5, 3.6 and 3.7 (Regulation 1272/2008/EC)	2B
Sensitising substances		MinDef discourages use of substances, classified by CLP Regulation as H 334 and/or H 317 Upper limit may not exceed : - H 334 (cat 1A) 0,1 % by weight - H 317 (cat 1A) 0,1 % by weight - H 334 (cat 1B) 1,0 % by weight - H 317 (cat 1B) 1,0 % by weight	Health & Safety Decree, chapter 4, article 4.4 CLP Regulation, annex I chapter 3.1, 3.5, 3.6 and 3.7 (Regulation 1272/2008/EC)	2B

Annex 2: Fire-extinguishing agents

Substance / product	CAS no.	Measure	Legislation	Restriction category
Halon 1211 Halon 1301	353-59-3 75-63-8	Legislation exclusively permits use for existing critical applications.	Annex VI of Regulation 1005/2009/EC	1B
Halon 1211 Halon 1301	353-59-3 75-63-8	Legislation prohibits the use in new military vehicles, ships and ground equipment	Annex VI of Regulation 1005/2009/EC	1A
Halon 1211 Halon 1301	353-59-3 75-63-8	MinDef discourages use in new aicraft.	Annex VI of Regulation 1005/2009/EC	2B
Halon 1011 Halon 2402	74-97-5 124-73-2	Legislation prohibits use.	Regulation 1005/2009/EC	1A
Perfluorhydrocarbons: - Perfluormethane - Perfluorethane - Perfluorpropane - Perfluorbutane - Perfluorpentane - Perfluorhexane - Perfluorcyclobutane	 75-73-0 76-16-4 76-19-7 355-25-9 678-26-2 355-42-0 115-25-3	Legislation prohibits use.	Regulation 1005/2009/EC	1A
Perfluoroctanoic acid and derivates	335-67-1	MinDef discourages use.	POP Regulation (Regulation 757/2010/EC)	2B

Annex 3: Corrosion protection / surface treatment

Substance / product	CAS no.	Measure	Legislation	Restriction category
Cadmium	7440-43-9	MinDef does not allow new military land vehicles, ships and equipment to be supplied with a corrosion resistant layer based on galvanised cadmium plating. Sufficient alternatives are available.	REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC)	2A
Cadmium* en cadmium compounds: Cadmiumoxide Cadmiumsulfide	7440-43-9* 1306-19-0 1306-23-6	MinDef does not allow use of cadmium in new deliveries of electronic contacts unless: • there are no technically equivalent alternatives; • the OEM of the aircraft prohibits use of non-cadmium electronic contacts.	ROHS Regulation (Regulation 2011/65/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2B
Chromium(VI)compounds	18450-29-9	According to law, military land vehicles, ships and equipment may not contain a corrosion resistant layer based on chromium(VI)compounds. Sufficient alternatives are available.	REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2A
Chromium(VI)compounds	18450-29-9	According to law, the use of chromium(VI) in coating system to be applied on aircraft is prohibited for these parts of the aircraft, for which the Original Equipment Manufacturer (OEM) has certified the use of a non-chromium(VI) coating system. In case a chromium(VI)-containing coating system is to be applied on (parts of) an aircraft, the concentration of the chromium(VI)compounds in the coating system has to be as low as technically achievable.	MinDef Policy REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Lead compounds: Among others Leadcarbonates Leadsulphate	 598-63-0 1319-46-6 7446-14-2	Legislation prohibits use in a corrosion protection layer	REACH Regulation, annex XVII, section 16 and 17 (Regulation 1907/2006/EC)	1A
Lead compounds: Leadchromate Leadchromate molybdate	 7758-97-6 235-759-9	MinDef does not allow use.	REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2A
Silica crystalline; Quarts Cristoballite Tridynite	 14808-60-7 14464-46-1 15468-32-3	MinDef discourages use in paints, sealants and the like.	Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2B

Annex 4: Elektronics / lighting

Substance / product	CAS no.	Measure	Legislation	Restriction category
Lead compounds	7439-92-1	MinDef MOD discourages use	ROHS Regulation (Regulation 2011/65/EC)	2B
Flame retardants: PBB TRIS PBDE (PBBE) PBDO (PBBO)	 59536-65-1 126-72-7	Legislation prohibits use. Upper limit that may not be exceeded: 0,1 % by weight	ROHS Regulation (Regulation 2011/65/EC)	1A
Cadmium* en cadmium compounds: Cadmiumoxide Cadmiumsulfide	7440-43-9* 1306-19-0 1306-23-6	MinDef does not allow use of cadmium in new deliveries of electronic contacts unless: • there are no technically equivalent alternatives; • the OEM of the aircraft prohibits use of non-cadmium electronic contacts.	ROHS Regulation (Regulation 2011/65/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2B
Beryllium* en berylliumcompounds: Beriliumchloride Beriliumfluoride Beriliumhydroxide Beriliumsulfate	7440-41-7* 7787-47-5 7787-49-7 13327-32-7 13510-49-1	MinDef discourages use in electronics.	Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2B
Lithium batteries		Transport legislation prohibits the transportation of lithium batteries, unless they successfully passed all required tests. Elucidation: The manufacturer must supply a statement, that the battery has successfully passed all legally required tests.	UN-manual of Tests, and Criteria, Part III, subsection 38.3	1B 3A
Batteries containing cadmium	7440-47-7	MinDef does not allow use of batteries containing cadmium, unless no technically equivalent alternatives are available or the aircraft OEM prohibits use of alternatives.	Directive 2013/56/EC	2B

Substance / product	CAS no.	Measure	Legislation	Restriction category
		Upper limit may not exceed: 0,002 % by weight.		
Batteries		From 01-01-2014, the Service provider is required to report the presence of batteries in equipment	Directive 2013/56/EC, paragraph 11	3A
PVC		MinDef discourages the use of PVC in electric wiring, especially in closed spaces	MinDef policy	2B

Annex 5: Textiles, articles of clothing, personal gear and shoes

Substance / product	CAS no.	Measure	Legislation	Restriction category
Azo-dyes: 4-Aminodiphenyl Benzidine 4-Chloro-o-toluidine 2-NMaphtylamine o-Aminoazotoluene 2-Amino-4-Nitrotoluene 2,4-Diaminocanisole 4,4-Diaminodiphenyl-methane 3,3-Dichlorobezidine 3,3-Dimethoxybenzidine 3,3-Dimethylbenzidine 3,3-Dimethyl—4,4-diaminiphenylmethane p-Chloroaniline p-Cresidine 4,4-Methylene-bis-2-chloroaniline 4,4-Oxydianiline 4,4-Thiodianiline 2,4-Toluenediamine o-Toluidine 2,4,5-Trimethylaniline o-Anididine p-Amino-azobenzene 2,4-Xylidine 2,6-Xylidine **C39H23ClCrN7O12S.2N** **C46H30CrN10O20S2.3N**	 92-67-1 92-87-5 95-69-2 91-59-8 97-56-3 99-55-8 615-05-4 101-77-9 91-94-1 119-90-4 119-93-7 838-88-0 106-47-8 120-71-8 101-14-4 101-80-4 139-65-1 95-80-7 95-53-4 137-17-7 90-04-0 60-09-3 95-68-1 87-62-7 118685-33-9	Legislation prohibits the use. All Azo-dyes who might disintegrate into amines which are (suspected to be) carcinogenic are mentioned on this list. Upper limit may not exceeded: 30 mg/kg for each of the substances mentioned on this list	REACH Regulation, annex XVII, section 43 (Regulation 1907/2006/EC)	1A
Asbestos n.o.s. Actinolite Asmosite	1332-21-4 77536-66-4 12172-73-5	Legislation prohibits use	REACH Regulation, annex XVII, section 6	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Anthofylite Chrysolite Tremolite Crocidolite	77536-67-5 12001-29-5 77536-68-6 12001-28-4	Not detectable for any asbestos mentioned in the list.	(Regulation 1907/2006/EC)	
Disperse dyes: Disperse blue 1 Disperse bleu 35 Disperse blue 106 Disperse blue 124 Disperse orange 3 Disperse orange 37/76 Disperse orange 37 Disperse orange 76 Disperse yellow 76	 2475-45-8 12222-75-2 12223-01-7 61951-51-7 730-40-5 13301-61-6 12223-33-5 51811-42-8 2832-40-	Legislation prohibits use	REACH Regulation, annex XVII, section 43 (Regulation 1907/2006/EC)	1A
Disperse yellow 3 Disperse blue 3 Disperse blue 7 Disperse blue 26 Disperse blue 102 Disperse yellow 1 Disperse yellow 9 Disperse yellow 39 Disperse yellow 49 Disperse orange 1 Disperse red 11 Disperse red 17 Disperse brown 1	82475-45-83179- 90-6 3179-90-6 3860-63-7 12222-97-8 119-15-3 6373-73-5 12236-29-2 54824-37-2 2581-69-3 2872-48-2 3179-89-3 23355-64-8	MinDef does not allow use. Disperse dyes, which are suspected of skin sensitisation and cause allergic reactions, are mentioned in this list. Upper limit that may not be exceeded: 5 mg/litre for each of the substances mentioned on this list.		2A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Flame retardants: Tetrabromodiphenyl ether Pentabromodiphenyl ether Hexabromodiphenyl ether Heptabromodidhenyl ether Perfluoroctane sulfonic acid and derivates Bis-(2,3-dibromopropyl) phosphate	5412-25-9 5455-55-1	The legislator prohibits use. The substances, mentioned on this list are persistent for the environment and are also suspected to harm the human immune system. Upper limit that may not be exceeded: 50 mg/kg.	POP Regulation (Regulation 757/2010/EC)	1A
Formaldehyde	50-00-0	Legislation prohibits use Upper limit that may not be exceeded: 100 ppm.	Consumer product safety decree formaldehyde d.d. 22-03-2001	1A
Cadmium	7440-43-9	MinDef does not allow use Upper limit that may not be exceeded: 100 ppm	REACH Regulation, annex XVII, section 23 (Regulation 1907/2006/EC)	2A
Leather containing Chromium(VI)	7440-47-3	Legislation prohibits use of leather articles contains chromium(VI), which comes in contact with the skin. Legislation prohibits use of articles containing chromium(VI), in case these leather parts are in contact with the skin. Upper limit may not exceed: 3 mg/kg (0,0003 % by weight) of the total dry weight of the leather.	REACH Regulation, annex XVII, section 47 (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	1A
Mercury	7439-97-6	Legislation prohibits use. Upper limit that may not be exceeded: 1 ppm	REACH Regulation, annex XVII, section 18 (Regulation 1907/2006/EC)	1A
Lead	7439-92-1	MinDef does not allow use. Upper limit that may not be exceeded:	Government policy on sustainable procurement	2A

Substance / product	CAS no.	Measure	Legislation	Restriction category
		100 ppm.		
Nickel	7440-02-0	MinDef does not allow use Upper limit that may not be exceeded: 0,5 ug/cm2/week.	REACH Regulation, annex XVII, section 27 (Regulation 1907/2006/EC)	1A
Organotincompounds: - Tributyltin - Trifenyltin - Tributyl(vinyl)tin - Azocyclotin - Fentinhydroxyde - Trifenyltinacertate	 688-73-3 36643-28-4 7486-35-3 41083-11-8 76-87-9 900-95-8	Legislation prohibits use. Upper limit that may not be exceeded: 0,1 gram / kilogramme.	REACH Regulation, annex XVII, section 20 (Regulation 1907/2006/EC)	1A
Pesticides: HCH and all isomers Lindane Aldrin Chloroacne Dieldrin Endrin Heptachlor Heptachlor epoxide Isodrin Kelevane Chlordecone (keptone) Telodrin Strobane Toxaphene Hexachlorobenzene DDT DDE DDD Methoxychlor Perthane Quintozene	 608-73-4 58-89-9 300-00-2 57-74-9 60-57-1 72-20-8 76-44-8 1024-57-3 465-73-6 4234-79-1 143-50-0 297-78-9 8001-50-1 8001-35-2 118-74-1 50-29-3 72-55-9 72-54-8 72-43-5 72-56-0 82-68-8	Legislation prohibits use. (Pesticides can be present in natural fibres, especially cotton) Upper limit that may not be exceeded (valid for every separate pesticide): 0,5 ppm.	POP Regulation (Regulation 757/2010/EC) Biocide Regulation (Regulation 528/2012/EC)	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Solvents: Pentachloroethane Tetrachloromethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane	 76-01-7 56-23-5 630-20-6 79-34-5	Legislation prohibits use Upper limit that may not be exceeded: 1000 mg / kg.	REACH Regulation, annex XVII, section 33 untill 40 (Regulation 1907/2006/EC)	1A
Solvents: Benzene Phenol Toluene Xylene (alle isomeren.	 71-43-2 108-95-2 108-88-3 1330-20-7	MinDef does not allow use during the production process of yarn and/or fabrics.	Government policy on sustainable procurement	2A
CMR-substances		The MOD does not allow the use of Carcinogenic-, Mutagenic- and/or Reprotoxic substances.	REACH Regulation, annex XVII, section 28 until 31 (Regulation 1907/2006/EC)	2A
Methylbromide Phosphine	74-83-9 7803-51-2	MinDef does not allow the use as a disinfectant in/on packaging and/or containers	Biocide Regulation (Regulation 528/2012/EC)	2A
Nano-materials		Service provider reports use to contract manager. The report must contain a risk assessment and the necessary risk management measurements The risk assessment must be based on the publication "Guidance on the protection of the health and safety of workers from the potential risks related to nanomaterials at work", Guidance for employers and health and safety practitioners, published by the European	European Commision policy	2B

Substance / product	CAS no.	Measure	Legislation	Restriction category
		Commission, Directorate of Employment, Socials affairs and Inclusion, version June 2014. The document can be downloaded by internet.		
Biocides		A foreign Service provider may not use a biocide for treatment of (wooden) packaging and/or containers, unless the active substance: is admitted for the intended use	Biocide Regulation (Regulation 528/2012/EC)	2A
Biocides		Legislation prohibited use for treatment of clothing, shoes etc. unless the active substance is admitted for the intended use	Biocide Regulation (Regulation 528/2012/EC)	1B

Annex 6: Refrigerants

Substance / product	CAR no.	Measure	Legislation	Restriction category
CFC's		Legislation prohibits use	Regulation 1005/2009/EC	1A
HCFC's		Legislation prohibits use in new refrigerators and deep-freezers. Legislation prohibits the refilling of equipment with recycled HCFC's.	Regulation 1005/2009/EC.	1A
Ammonia Propane Carbondioxide	7664-41-7 74-98-6 124-38-9	MinDef does not allow use of these refrigerants in land vehicles, ships, aircraft and/or equipment.	MinDef policy	2A
HFC's		MinDef does not allow use of refrigerants with a global warming potential (GWP) of more than 2500	MinDef policy Regulation 517/2014/EC	2A
HFC's		MinDef discourages use of refrigerants with a global warming potential (GWP) of more than 150	MinDef policy Regulation 517/2014/EC	2B

Annex 7: Radioactive sources

Substance / product	CAR no.	Measure	Legislation	Restriction category
Radioactive source		MinDef does not allow use, unless the contract manager can prove that use of closed radioactive sources is a necessity. This requirement is not valid for closed radioactive sources, for whom the radiation levels do not exceed the levels mentioned in annex 1 of the Radiation Protection Degree (2001).	Nuclear energy act	2B
Radioactive source		Service provider reports all radioactive sources to the contract manager. The report must contain the radiation levels (BeQ) of each source.	MinDef policy	3A

Annex 8: Munitions

Substance / product	CAR no.	Measure	Legislation	Restriction category
Substances, mentioned in annex XIV of the REACH Regulation		Legislation prohibits use in substances and mixtures, unless an authorisation has been granted	REACH Regulation, annex XIV (Regulation 1907/2006/EC)	1A
Depleted uranium	7440	MinDef does not allow use	MinDef policy	2A
Tungsten-Nickel-Cobalt alloy		MinDef does not allow use unless no alternative alloy is available	Health & Safety Decree, chapter 4, article 4.17	2B
Carcinogenic, mutagenic and/or reprotoxic substances (CMR-substances).		MinDef discourages use	REACH Regulation, annex XVII, section 28, 29 and 30 (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5, 3.6 and 3.7 (Regulation 1272/2008/EC)	2B
All substances		For every part of munitions, the Service provider must report: - name, CAS no and weight of every substance - if the substance contributes to emissions during - firing/ignition; - flight* - strike* * when applicable	CLP Regulation, annex I chapter 3.5, 3.6 and 3.7 (Regulation 1272/2008/EC)	3A

Annex 9: Nano materials

Substance / product	CAR no.	Measure	Legislation	Restriction category
Nano-materials		Service provider reports use to contract manager. The report must contain a risk assessment and the necessary risk management measurements The risk assessment must be based on the publication "Guidance on the protection of the health and safety of workers from the potential risks related to nanomaterials at work", Guidance for employers and health and safety practitioners, published by the European Commission, Directorate of Employment, Socials affairs and Inclusion, version June 2014. The document can be downloaded by internet.	European Commision policy	2B

Annex 10: Biocides and desinfectants

Substance / product	CAR no.	Measure	Legislation	Restriction category
Biocides		Legislation prohibits use, unless CTGB (NLD regulator) has admitted the active substance for the intended use	Biocide regulation (Regulation 528/2012/EC)	1B
Methylbromide Phosphine	74-83-9 7803-51-2	MinDef does not allow use as a disinfectant in/on packaging and/or containers	Biocide regulation (Regulation 528/2012/EC)	2A
Cybutryne	28159-98-0	MinDef discourages use in Anti-fouling paint	International Convention on the Control of Harmful Anti-Fouling Systems on Ships	2B
Biocides		A foreign Service provider may not use a biocide for treatment of (wooden) packaging and/or containers, unless the active substance: - is mentioned in annex 1, 1A or 1B of this directive and is admitted for the intended use	Biocide regulation (Regulation 98/8/EC)	2A

Annex 11: Asbestos

Substance / product	CAR no.	Measure	Legislation	Restriction category
Asbestos n.o.s. Actinolite Asmosite Anthofylite Chrysolite Tremolite Crocidolite	1332-21-4 77536-66-4 12172-73-5 77536-67-5 12001-29-5 77536-68-6 12001-28-4	Legislation prohibits use Not detectable for any asbestos mentioned in the list.	REACH Regulation, annex XVII, section 6 (Regulation 1907/2006/EC)	1A

Annex 12: Reporting of substances of very high concern in (complex) objects

The Service provider must report:

- substances mentioned in the candidate list annex XIV and/or annex XIV present in a concentration greater than 0,1 % (w/w) in any component article. The Service provider may aggregate the information at assembly or sub-assembly level to make the information flow manageable, provided that the presence of any annex XIV- or candidate list annex XIV substance is not "hidden";
- the use of the substance (in general terms);
- risks caused by the presence of the substance during use, maintenance and/or waste disposal; where these risks are present, the appropriate risk management measures are reported in the user instruction, maintenance documentation and/or waste disposal instruction.

Name of substance	Cas-nummer	Use of substance (in general terms)	Causes a risk during			Leglislation
			Use*	Maintenance*	Waste disposal*	

* Yes or No

Attachment D ***List of abbreviations***

AC	Aircraft
ACT	Aircrew Coordination Training
AIS	Automatic Identification System
AOR	Area Of Responsibility
ARC	Air Reconnaissance Capacity
ATC	Air Traffic Control
ATPL	Airline Transport Pilots License
BARALT	Barometric altitude
CD	Counter drugs
CDNU	Control Display Navigation Unit
CDR	Critical Design Review
COI	Contact Of Interest
CPL	Commercial Pilot License
DCCG	Dutch Caribbean Coast Guard
DGPS	Differential GPS
DME	Distance Measuring Equipment
DSC	Digital Selective Calling
EASA	European Aviation and Safety Agency
EFZ	Exclusive Fishery Zone
EO	Electro Optical
EPIRB	Emergency Position Indication Radio Beacon
FAA	Federal Aviation Administration
FIR	Flight Information Region
FMS	Flight Management System
FOV	Field Of View
FV	Fishing Vessel
GF	Go Fast
GPS	Global Positioning System
GS	Ground Speed
HD	Hard Disc
HF	High Frequency
HSI	Horizontal Situation Indicator
ICAO	International Civil Aviation Organization
ICS	Internal Communication System
IMO	International Maritime Organization
IFR	Instrument Flight Rules
IR	Infra Red
IRDS	IR Detection System
ISA	International Standard Atmosphere
ISAR	Inverse Synthetic Aperture Radar
JRCC	Joint Rescue Coordination Center
LE	Law Enforcement
LLTV	Low Light Tele Vision
LOS	Line Of sight
MAR-OPS	Military Aviation Regulations - Operations
MC	Mission Commander
ME	Multi Engine
MEEL	Mission Essential Equipment List
MMS	Mission Management System
MOD	Ministry Of Defense
MPA	Maritime Patrol Aircraft

NEI	Noise Exceeding Irridiance
NETD	Noise Exceeding Temperature Difference
NM	Nautical Mile
NVG	Night Vision Goggle
OAT	Outside Air Temperature
OSC	On Scene Coordinator
OT	Operational Team
PC	Project Coordinator
PDR	Preliminary Design Review
PIW	Person In Water
PM	Project Manager
POD	Probability Of Detection
RADALT	Radar altimeter
RNP	Required Navigational performance
ROT	Rate One Turn
RSP 1	Recognized Surface picture
RSP 2	Radio Selection Panel
R/T	Receive Transmit
SAR	Search And Rescue
SO	Sensor Operator
SOF	Safety Of Flight
SOLAS	Safety Of Lives At Sea
SRU	Search and Rescue Unit
SSS	Saba-St. Maarten-St. Eustatius
SVR	System Verification Review
TOI	Target Of Interest
TP	Test Plan
TR	Test Report
TRR	Test Readiness Review
TTW	Territorial Waters
UDP	Uniform Daylight Period
UHF	Ultra High Frequency
VFR	Visual Flight Rules
VHF AM/FM	Very High Frequency Amplitude Modulation/Frequency Modulation
VOR	VHF Omni directional Range
WIGS	West Indies Guard Ship

Annex A

PROGRAMME OF REQUIREMENTS

Helicopter capability

for the

Dutch Caribbean Coastguard

Version: 1.0

CONTENTS

1. Introduction

1.1. General

This Programme Of Requirements (POR) describes the requirements to be met with regard to the DCCG helicopter capability for the Dutch Caribbean Coast Guard DCCG.

The concept of operations for the DCCG Helicopter capability is described in chapter 2. The operational, technical and training requirements for this SAR capability are described in chapter 3. Miscellaneous issues and requirements are described in chapter 4.

In Attachment A the required equipment is described in more detail. Attachment B details responsibilities for the provision of specific equipment between State and Service provider specific. Attachment C describes the required medical equipment onboard of the helicopter. Attachment D defines banned and restricted substances. In Attachment E the used abbreviations are defined.

1.2. DCCG Area of Responsibility and tasking

The DCCG is responsible for several tasks in their Area Of Responsibility (AOR). This is a large area, including the Territorial Waters (TTW) of the Caribbean territory of the Kingdom of The Netherlands, the Curaçao and the adjacent Flight Information Regions (FIR) and the Caribbean sea (see chart below).

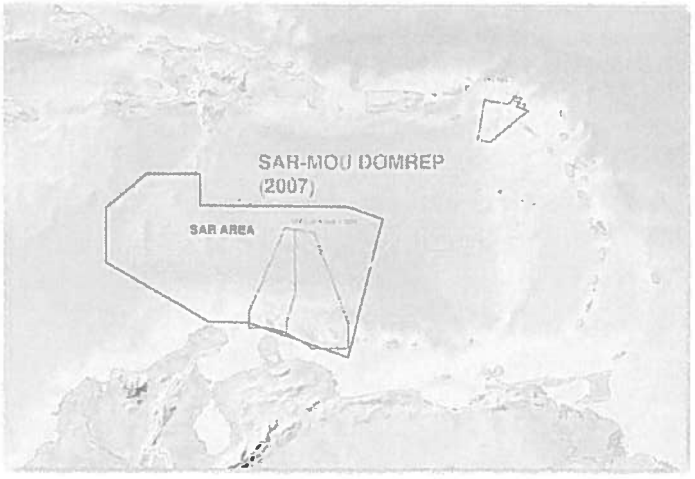

Figure 1. DCCG Area of Responsibility. (TS = Territorial Sea, EFZ = Exclusive Fishery Zone)

Both national and international legislation is applicable in the AOR. National legislation has been laid down in regulations of the Kingdom of The Netherlands as a whole and are complemented by local regulations on the individual islands. International legislation is mainly based on regulations from the International Maritime Organization (IMO) and International Civil Aviation Organization (ICAO).

The task for the DCCG is general law-enforcement, such as border patrol, customs operations, maritime patrol and control and counter drugs (CD) operations, humanitarian relief operations and Search and Rescue.

1.3. DCCG Helicopter Capability

The Service provider will provide the DCCG Helicopter capability by using a number of dedicated helicopters, identical configuration of mission and safety equipment. With those helicopters, the Service provider should be able to meet the requirement for a continuous (24/7) availability of at least one helicopter. The number of crews should be such that all scheduled flights can be met and a continuous availability for ad-hoc flights is guaranteed.

A minimum of 600 and a maximum of 750 flight hours per year, for planned and ad-hoc flights, is to be expected. These flight hours will be used for DCCG tasks (as described in Chapter 2) and can be indicatively divided between Search and Rescue tasks (25% of flight hours) and Law Enforcement/coastguard support tasks (75% of flight hours). This division of percentages of flight hours is however not a restriction for the tasking for the helicopter.

The Service provider will provide the aircraft and will be the operator of the aircraft. The Service provider will be responsible for all maintenance and servicing of the aircraft, the mission equipment and the safety equipment. Attachment C provides a detailed overview of the responsibilities for the provision of specific equipment between State and Service provider. The Service provider will also provide sufficient and capable flight crews (pilots, sensor operators, hoisting and medical personnel).

The main operating base is Coastguard Airstation Hato, situated on the Curaçao International Airport (Hato). The Service provider should use the facilities (hangar space, storage and offices) of the Coastguard Air Station Hato. Incidentally the helicopters will be assigned to operate from other airfields in the broader Caribbean area to support DCCG operations

2. Concept of operations

This chapter describes the concept of operations for Search and Rescue with the DCCG helicopters. The information provided in this chapter has to be used in conjunction with the requirements as laid down in chapter 3 and serves to provide a context of the DCCG helicopter operations.

2.1. Tasks for the DCCG helicopter capability

Coastguard Support is based on Article 18 of the DCCG Act ("Rijkswet Kustwacht voor Aruba, Curacao en Sint Maarten, alsmede voor de openbare lichamen Bonaire, Sint Eustatius en Saba")[1]. The helicopters should be capable of performing the following tasks:

- Search and Rescue (SAR);
- Support in case of disaster, accidents and interferences in traffic or communications which have no consistency with other disruptions of the internal safety or public order;
- general police tasks, such as CD-operations, customs/illegal immigration and human trade;
- Transportation of passengers and/or cargo;
- Other special request for support which can reasonably be requested based on the capabilities of the assets.

2.2. Mission profiles

Two types of mission profiles are described and provide the context of the most important and most demanding (with regard to range, endurance and sensor fit) missions to be executed. The two profiles are examples, the helicopters will execute a wider variety of missions during planned and ad-hoc flights.

Every operational flight can be retasked into a SAR mission. Therefore every operational flight will be executed as airborne SAR-unit.

2.2.1. Search and Rescue mission

Aim: localization and rescue of people in distress.

Execution: The helicopter should be airborne within 45 minutes (UDP)/60 minutes (outside UDP) after the first alert by the Joint Rescue and Coordination Center (JRCC). Desired reaction time is 30 minutes (UDP)/60 minutes (outside UDP)
Within this reaction time the maintenance crew will prepare the helicopter, and the aircrew will be briefed by the JRCC by telephone or other electronic means about the ongoing SAR-case.

[1] Article 18 of the DCCG Act reads as follows:
The Governor of Aruba, Curacao and Sint Maarten respectively, or the governing body of the municipalities Bonaire, Sint Eustatius and Saba, has the power, in case of disaster, accidents and interferences in traffic or communications which have no consistency with other disruptions of the internal safety or public order, to offer parts of the Coastguard at the disposal of the government of Aruba, Curacao and Sint Maarten respectively . In other emergencies such will be done in consult with our Minister.

Primary search units are the DCCG Fixed Wing assets. Occasionally, the helicopter can also be used as a primary search unit, both individually and/or as a complementary search asset, able to start a search and coordinate the action. The search should be executed with best sensor-settings, using all available sensors. Sensor priority and set up is depending on the kind of target (raft, Person In Water (PIW)), environmental conditions and the time of day. The helicopter should be able to drop pyrotechnic signal-devices and/or supplies near the distress location when the operation requires this.

Exclusive task for the helicopters is to rescue person(s) by hoisting[2] them from the water, a ship or any other location and subsequently transport persons (minimum of 3 at the same time) or by stretcher (MEDEVAC) if necessary (minimum of one) to a safe environment.

The helicopters will typical transit to up to 110 nm from shore at max speed with 6 POB, operate 1 hour on station, transit back and arrive at homebase with sufficient (iaw appropriate regulations) reserve-fuel. During the on-station period approximately 20 minutes of hovering shall be taken into account.

Communication is paramount during SAR. The helicopters will regularly act as On Scene Coordinator (OSC) and therefore both the quality and amount of communication equipment as well as the capability of the helicopter crew (including diver for hoisting operations) shall be sufficient to facilitate the OSC-communication requirements.

2.2.2. Law enforcement tasks

Aim: to shadow a Contact of Interest (COI) or any violation of the applicable laws and the matching violator. This may be followed by directing surface units to intercept and apprehend these vessels or collection of any (additional) evidence, such as photo's or videos.

Execution: These missions are flown day and night, planned and ad-hoc. In order to act on time the helicopter should be airborne within 45 minutes (UDP)/60 minutes (outside UDP) after the first alert by the Rescue Coordination Centre (RCC), providing intelligence and tasking about the mission. Taskings vary from supporting local police (finding escaped detainees, directing police units, etc) to assist other coastguard units during law enforcement tasks.

Within the reaction time the maintenance crew will prepare the helicopter, and the aircrew will be briefed by the RCC by telephone or other electronic means about the ongoing case. The helicopter will depart Hato to an undisclosed destination. The helicopter will search for assigned target in combination with other units by using all sensors (RDR/NVG/FLIR)

Once a violation is detected, all efforts should be aimed at determining the identity of the suspected violator. To achieve this, all sensors should be optimized for identification. In case of a positive identification as suspect vessel the helicopter must collect evidence of the violation, such as photo's, video, and IR images. If required the helicopter should maintain visual or radar/EO/IR contact and is to direct DCCG surface forces towards the target for interception and apprehension. During day and night the helicopter should be able to pass relevant information about the COI to other assets on shore, at sea or in the air. A capacity to exchange data between the JRCC and other coastguard-units by means of voice and data communications (secure and/or non-secure) is essential.

[2] Hoisting by means of singlelift, doublelift or stretcher under responsibility and execution by the Service provider.

The helicopters will typical transit to 110 nm from shore at max speed with 6 POB, operate 1 hour on station, transit back and arrive at homebase with sufficient (iaw appropriate regulations) reserve-fuel. During the on-station period approximately 20 minutes of hovering should be taken into account.

2.3. Mission Essential Equipment List

During every flight (planned or ad-hoc) one or more missions can be executed. The Mission Essential Equipment List (MEEL) describes all essential mission equipment required for each mission. Failure to comply with this MEEL may lead to cancellation of the intended flight. It is the authority of the JRCC to accept a helicopter for the intended flight even when the helicopter status is not in compliance with the MEEL for one or more missions to be executed during that flight. If, for example, the radar is found to be inoperative during the pre-flight for a SAR-mission, the JRCC can decide to continue the pre-flight and assign that helicopter for SAR although it's not in compliance with the MEEL. This MEEL is based on the main components of mission equipment. The final MEEL will be determined in close cooperation between the Service provider and the State and is depending on the final offered mission equipment suite.

Every mission can change instantly into a SAR-mission if and when persons and/or aircraft/vessels encounter an emergency and require immediate assistance. Because of this task, the helicopter is always "airborne SAR-unit", although the primary mission may be different. This means that after retasking by DCCG to SAR, the crew must be ready to execute SAR.

Mission / Essential equipment	Law enforcement	General service/ SAR	Coastguard/ Military support
Floatation gear	R	R	R
Autopilot with 4-axis stabilization	R	R	R
Radalt, 2 sets	R	R	R
Hoist	R	R	R
Flight safety equipment	R	R	R
Fixed search light[3] NVG compatible	R	R	R
Floodlights[3]	R	D	R
Radar	R	R	R
Moving map GPS	R	R	R
NVG compatible cockpit[3]	R	R	R
V/UHF homing device	R	R	R
VHF 1	R	R	R
VHF 2	R	R	R
HF	R	R	R
SATCOM	R	R	R
Secure voice	R	D	R
Launching equipment pyrotechnics	R	R	R

[3] Outside UDP only

FLIR	R	R	R
Provisions for launching droppable liferaft	R	R	R
Stretcher	NA	R	NA
UHF	R	R	R

Figure 1. Mission Essential Equipment List
R=Required D=Desired NA=Not applicable

2.4. Infrastructure Coastguard Airstation Hato

The State will put the infrastructure of Coastguard Airstation HATO (part of Curaçao international airport), set forth in the agreement ANNEX C - INFRASTRUCTURE Coastguard Airstation HATO, at the disposal of the Service provider. The Service provider should be aware of the fact that the infrastructure will be shared with personnel and materiel of the Coastguard, other providers of SAR and surveillance capabilities for the DCCG, the crew and supporting personnel of the helicopter of the West Indies Guard Ship (WIGS) under command of the Fleet Commander NA&A, security and general service. Incidentally Coastguard Airstation HATO is used by Netherlands' armed forces and foreign detachments.

3. Requirements

3.1. Introduction

This chapter describes the requirements for the DCCG Helicopter capability. Requirements marked as "desired" are related to the quotation phase of the ARC DCCG project as mentioned and graded in the RFQ. Upon contract award to the selected Service provider, the PoR will be reviewed to reflect the final contracted requirements.

3.2. General requirements

The Service provider is responsible for the procurement, installation, certification, qualification, operation, maintenance, repair, replacement and adjustment of the aircraft and related support, mission and safety equipment, either already installed or planned to be installed, for the duration of this agreement. Three years after the aircraft have been delivered, the State determines whether the equipment should be updated. Updates will take place via the technical change procedure of Article 13 of the Agreement. Interim updates are limited to replacement of unserviceable parts and obligatory modifications resulting from either maintenance requirements or mandatory upgrades based on regulation requirements.

The general requirements are comprised of the following:

- The Service provider shall provide the DCCG Helicopter capability by using a number of dedicated ~~dual-piloted~~ Dutch (PH) registered helicopters and in an identical configuration of mission and safety equipment to provide a minimum of 600 to a maximum of 750 flight hours per year
- With those helicopters, the Service provider shall be able to meet the requirement for a continuous (24/7) availability of at least one helicopter. The number of crews shall be such that all scheduled flights can be met and a continuous availability for ad-hoc flights is guaranteed;
- The Service provider shall during the duration of the contract comply with the EASA requirements as laid down in Part-SPO (Specialised Operations) of Commission Regulation (EU) No 965/2012 and NLD MAROPS-1 (distributed separately) in addition thereto. Service provider shall be responsible for audits by an independent body (to be approved by the State) based on EASA Part-SPO and NLD MAROPS-1 every two years and report the results to the State. The results of the audit shall be discussed with the State and be implemented by the Service provider;
- The Service provider shall agree to any form of inspection by the Aviation Authorities of the Caribbean part of the Kingdom of the Netherlands;
- All equipment and devices installed must be certified in accordance with the telecommunication legislation and shall meet the appropriate aviation requirements;
- Compliance with applicable airworthiness- and other regulations for the crew, helicopters and installed equipment shall initially be demonstrated by the Service provider not later than the formal acceptance by the State;
- Service provider shall ensure that all aircrew and maintenance personnel involved is available for, and fully cooperate with, a screening procedure to be executed by the State in accordance with Article 30 of the Agreement;
- The Service provider shall be responsible for the availability of aircrew (pilots, hoist operator, Rescue Operator and medical[4]) and maintenance crew and helicopter to be able to meet the notice requirement of 45 minutes (UDP)/60 minutes (outside UDP) at any time (one helicopter airborne within 45/60 minutes after first alert). Desired reaction time is 30 minutes (UDP)/60 minutes (outside UDP)
- Within this reaction time the maintenance crew shall prepare the helicopter;

[4] Upon the preference of the Service provider, the role of Rescue Operator and Medical can be combined in one crew member.

- The Service provider shall ensure a dispatch reliability of more than 98% for the Operational helicopter for planned and ad-hoc flights, measured over a year period. Dispatch reliability means that the Operational helicopter shall be able to take off and commence the assigned mission within the allocated time. A helicopter is Operational from the moment that the helicopter is Airworthy and Mission ready, all qualified crewmembers are on board of the helicopter, and the helicopter is able to commence moving at its own power (sufficiently fuelled for the planned mission). For a planned flight a delay in take-off time of maximum 15 minutes is acceptable. Further details can be found in the agreement;
- The Service provider shall ensure a mission reliability, based on the functional status of the helicopter and its systems, of more than 98.5% for the Operational helicopter for planned and ad-hoc flights, measured over a year period. Mission reliability means that the helicopter after take-off shall be able to complete the assigned mission with the MEEL equipment operational and as ordered. Further details can be found in the Agreement;
- All equipment shall function under all environmental and operational conditions that may occur during the missions performed by the helicopter;
- The Service provider is responsible for the provision and serviceability of specific equipment and services as detailed in Attachment B;
- The Service provider shall deliver to the State operational user manuals in English for aircraft, mission and safety equipment;
- The colour of the helicopter shall be a grey tone-down colour with additional Coast Guard logos and striping. The final layout will be determined in a later stage ;
- All external lighting shall be NVG-compatible;
- To safeguard night operations measures shall be taken to shield the cockpit from cabin lighting;
- Cabin lighting shall be NVG-compatible and operable separately from cockpit lighting;

3.3. Detailed requirements for helicopter and helicopter systems

Subject	Requirement	Additional information
Airframe		
Aircraft general		Minimum capacity for 7 persons (including flight crew) and taken into account at least three PiW/passengers of which one transported on the stretcher.
		Dual hoist capability for 2 persons/272 kg at pilots side
		Sliding doors at both sides of the cabin. Sliding door at pilot side large enough and certified to load/unload the stretcher with person in a ground environment as well as in a hover/hoist environment.
		Twin-engined
		CAT A performance certified
		VFR/IFR certified
Flotation gear		Flotation gear in case of ditch, limitations temperature range -40°C to +70°C, up to seastate 6
Illumination CG-logo (floodlights)		For making the presence of a CG-asset at night known; with on/off switch in the cockpit
NVG compatible cockpit/cabin		Compatible with Class B NVG. Cabin lighting should be sufficient for medical actions at night, without compromising night vision in the cockpit. NVG equipment shall be part of the standard mission equipment on-board.
Aircraft Performance		
Endurance		Sufficient for a 7 POB max speed transit 2x110 nm, 1 hour on station (including 20 minutes hovering) and arrive at homebase with sufficient fuel iaw applicable aviation regulations (Regulation 965/2012). Based on ISA +20º
Range	Desired	Sufficient for a 7 POB transit between Curacao and St Maarten with sufficient fuel iaw applicable aviation regulations (Regulation 965/2012). Based on ISA +20º and 20 kts headwind.
Hot and heavy single engine hover capacity		Capacity in order to be able to recover the helicopter after engine failure while hovering with typical mission weight configuration (max fuel, 4 crewmembers) and ISA +20º
Radalt		2 independent sets, with visual- and audio warning
Autopilot with stabilization system		Autopilot with 4-axis stabilization system, rad-alt height (acquire) and hold mode, comply with item a. of Attachment A
Navigation		
Moving map GPS		Integrated in FMS
V/UHF homing device		Capable of homing on all emergency frequencies for SAR and on all V/UHF channels. Comply with item b. of Attachment A
Communication		
HF		1 set, comply with item c. of Attachment A
VHF(AM)		2 sets, comply with item d. of Attachment A
VHF(FM)		2 sets, comply with item e. of Attachment A
UHF		1 set, comply with item f. of Attachment A
SATCOM (BLOS)		1 set, comply with item g. of Attachment A.

Secure voice communications (LOS)		Motorola DM4000 series (or compatible system). Motorola DM4000 series is the DCCG standard set installed in DCCG units. 1 set, comply with item h. of Attachment A.
3/4G mobile communication service	Desired	1 set, able to directly communicate from helicopter though land-based cell equipment/towers in UMTS/LTE network.
Communication systems selection		Communication systems selection shall comply with item i. of Attachment A.
Automatic Identification System (AIS)		Comply with item j. of Attachment A
Warship W-AIS	Desired	Comply with item k. of Attachment A.
(Specific) mission equipment		
Radar		Surface radar, comply with item l. of Attachment A
Electronic Optical/Infra Red (EO/IR)		Comply with item m. of Attachment A
Provisions for ruggedized laptop workstation		Located at Hoist Operator position
Autonomous optical detection	Desired	Comply with item n. of Attachment A
Droppable life raft		Comply with item o. of Attachment A
Fixed searchlight		Comply with item p. of Attachment A
Hoist equipment		Winchman harness, astronautnet, double- sling
Location marker release		Release of location markers (pyrotechnic signals). Comply with item q. of Attachment A
Self locating drift marker buoys release		Release of self locating drift marker buoys. Comply with item r. of Attachment A
Capability for one stretcher		Capacity to hoist and transport one patient horizontally on medical stretcher.
MEDEVAC kit		Comply with item s. of Attachment A
Digital camera		Comply with item t. of Attachment A.

Table 3. Aircraft and aircraft systems requirements

3.4. Minimum Qualification Requirements

Coastguard missions can vary from "routine-like" flights, such as transportation, to special flight operations, such as low level operations, hoisting from platforms and ships, day and night and landing on off-airfield sites. Consequently only highly trained and qualified personnel will be able to carry out such missions in a safe and responsible way. Additionally the pilot, as Pilot in Command and Mission Commander, is responsible for the tactical use of the helicopter.

A typical environment for Coastguard missions is at night, low (VFR minima) and above sea. Hoist operations and/or CD-operations will take place at 30-80 feet in a dynamical environment where the target (COI or SAR-target) can make abrupt, quick and unpredictable manoeuvres. Coastguard operations can be highly operational and tactical.

The qualification requirements for a Pilot in Command (PiC) shall be in accordance with applicable legislation and regulations (such as Regulation 965/2012 and EASA Part-FCL).

Pilots engaged in Coastguard-operations shall as a minimum comply with the following qualification requirements:

- CPL(H)
- ATPL(H) for Pilot in Command;
- RT(English), LPE-English level 6, NQ(H), FI(H) or TRI;
- 1000 hours PiC of which 500 hours is as pilot-in command of turbine-helicopters or 1000 hours as co-pilot of which 200 hours as PiC under supervision;
- 500 hours operating experience in helicopters gained in single pilot/multi crew[5] operations in an operational maritime environment similar to the intended operationn if Service provider intends to execute operations (partly) single pilot for this Agreement~~n~~;
- Broad knowledge of SAR operations and co-operation with maritime units;
- Be able to act independently as on-scene commander (during SAR- and CD-operations);
- Received 250 hours instruction in a maritime operational environment;
- 200 hours VMC at night of which 150 hours as PiC;
- 300 hours IFR flight experience;
- 150 hours flying < 500 feet (at night or under IMC);
- 100 hours hoisting conducted offshore (equally divided hoisting from vessels/water and day/night) of which 60 hours as PiC;

The qualification requirements for the hoist operator, Rescue Operator and Medical shall be in accordance with applicable legislation and regulations. Hoist Operator engaged in Coastguard-operations shall as a minimum comply with the FREC-3 (First Response Emergency Care level 3) or EMT (Emergency Medical Technician) qualification requirements. Rescue Operator engaged in Coastguard-operations shall as a minimum comply with the FREC-4 (First Response Emergency Care level 4) or AEMT (Advanced Emergency Medical Technician) qualification requirements. In addition to the requirements of the Rescue Operator, the Medical shall as a minimum comply with SALM-3 (Safe Administration of Lifesaving Medication level 3) qualification requirements. The above mentioned minimum requirements may be fulfilled with equivalent nationally recognized qualifications and upon agreement by the State.

3.5. Aircrew maritime training

In addition to the requirements above, pilots and other aircrew shall be qualified to execute maritime tasks as described in Chapter 2. This encompasses the following skills and proficiencies for day and night flights, to be trained under the responsibility of the Service provider prior to the initial DCCG Helicopter capability acceptance and prior to assignment of replacement crew for DCCG operations after FOC of the DCCG Helicopter capability:

- Search-and-rescue;
- Low level flying;
- Hoist operations;
- Landing and take-off in off-airfield locations;
- Approach of contacts followed by photo- and video runs;
- Search-patterns;
- VFR night-flying operations (aided (NVG) and unaided);
- Crew Resource Management;
- Ditching procedures;
- Maritime survival and dinghy drill.

[5] Service provider executes operations (partly) single pilot

3.6. Mission training (MQT)

For future crewmembers, the State will provide mission training and all other general DCCG procedures. Documentation will be delivered by the State.

Topics to be addressed are e.g.:

- Counter drugs- and Coast Guard operations;
- Overt and Covert operations;
- Recognition (ship/aircraft);
- Handover procedures;
- Working in a combined scene of action with several aircraft, helicopters and ships;
- Radio procedures maritime and SAR;
- Diplomatic clearance rules (civilian A/C) in the regional AOR;
- Intercept procedures (COI/GF).

The State shall produce a training plan that might include flights where the above mentioned skills are trained in the operational environment. The mission training might be concluded with a performance evaluation flight that will be judged by State personnel.

3.7. Currency and continuation training

The Service provider shall be responsible for the initial, currency and continuation training of present and future crewmembers of the Service provider. The hours required for these activities are inside the contracted flying hours. The Service provider shall state the number of yearly required flight hours for currency and continuation training during the period of performance including the proportionment of training hours which can be combined with operational flighthours and those for which specific training flight have to be conducted. The proportionment shall be used as one of the award criteria during the tendering phase and shall be agreed upon in the final contract. Specific training flights are not necessarily regarded as airborne SAR. Specific training flight shall not affect the 24/7 notice requirement.

3.8. Restrictions in the use of hazardous substances requirements

The use of environmentally hazardous material shall be avoided. The term "use" is meant in the widest sense, ranging from use as an operational material or means of maintenance to the use as construction material for the vehicle or its components. The list of banned and restricted substances is enclosed as Attachment D . The list is subdivided into ten categories (see table 4).

Group	Category
1	Industrial chemicals, used for the maintenance of equipment
2	Fire-extinguisher
3	Corrosion prevention
4	Electronics / lighting
5	Textiles, clothing, personal equipment and shoes
6	Refrigerants
7	Radioactive sources
8	Ammunition
9	Nano materials

Table 4. Categorization of use and/or substances

The Service provider shall inform the State in writing that he will NOT use any hazardous substances, which have been banned under the restriction categories 1A, 1B, 1C, and/or 2A, as indicated in Attachment D.

If the Service provider intends to use substances and/or materials within the restriction categories 1D, 2B and/or 3A, he shall inform the State in writing.
The Service provider shall actively support the State in his search for an alternative less hazardous – substance of restriction 2B.

The ban to use the hazardous substance / obligation to register the use of the hazardous substance is not valid if the maximum allowed level and/or detection level, mentioned in the appropriate table, has not been exceeded. When the assets reaches the ELOT, the Service provider is obliged to dispose and / or destroy them in accordance with the then applicable standards, regulations and legislation.

4. Miscellaneous project issues and requirements

This chapter describes the organization structure, communication matters, maintenance and other issues (secondary requirements) necessary to achieve a high standard of service during the agreement period.

4.1 Project organization

DCCG will assign a Project Coordinator (PC) (as mentioned in agreement article 17 – REPORTS AND NOTICES). After aircraft acceptance the PC represents the State in all matters concerning the agreement, except in the events that are outside the intent of this agreement. The Service provider shall assign a Project Manager (PM). The Service provider shall also assign a representative in the Operational Team (OT). The OT is responsible for the coordination of the flying activities (planned and ad-hoc) and the day-to-day operations with the helicopter. The State will coordinate and will be the chairman of the OT.

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Tasks of the OT shall be (at least):

- to issue a periodical (4 week) provisional planning of all flights (operational and training);
- the acceptance of periodical (4 week) maintenance planning;
- the evaluation of periodical (4 week) executed flights, maintenance and the registered (logbook) remarks and complaints.

Service provider shall, with regard to the project organization, at least:

- issue a specified yearly and periodical (4 weeks) maintenance planning;
- issue reports with regard to deferred defects for each flight;
- report periodically (4 weeks) about the execution of all flights, maintenance and accumulated flight hours in relation to the yearly planning;
- report risks to DCCG with regard to the way these risks influence the operational use of the helicopter.

4.2 Crew responsibilities

The PiC is responsible for flight safety. If there is a conflict between flight safety and mission, flight safety always overrules mission accomplishment.

4.3 Maintenance

Maintenance shall be carried out in accordance with the requirements of the Type Certificate Holder, under an EASA maintenance organization certificate and under an EASA or equivalently recognized civil aviation authority .

Additional maintenance tasks shall be carried out as deemed necessary by the Service provider in order to guarantee the dispatch and mission reliability requirements.

4.4 Systems Engineering, qualification and initial acceptance

The Service provider shall use the system engineering process (V-model) to come to a final design.

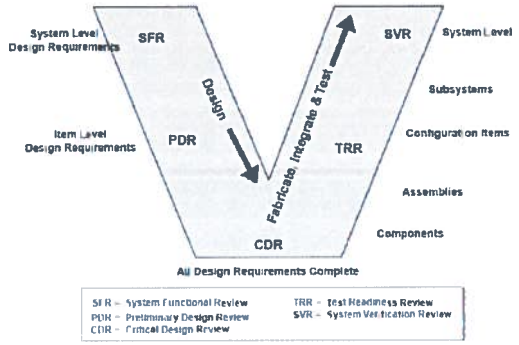

Figure 2. Systems engineering and verification

The Service provider shall be responsible to qualify the aircraft and all sub-systems integrated into the aircraft and demonstrate the compliance of the final configuration under all specified conditions. Therefore the Service provider shall make a proposal for a qualification program. All activities shall be determined and approved in consultation with the State.

The Service provider shall deliver a qualification process plan (Annex J of the Contract), which shall describe the qualification process, and shall be the basis for the qualification of the aircraft. The Service provider shall demonstrate that the aircraft configuration in the final design configuration complies with the requirements in this PoR.

The Service provider shall be responsible for all planning/meetings/logistic/facility reservations activities, to undertake a specific qualification test. The Service provider shall deliver all documentations/calculations/assessments/reports for all qualification activities in the English language.

Compliancy statements for all qualification activities shall be determined and approved in consultation with the State. The Service provider shall invite the State to witness all qualification testing activities. The State shall formally inform the Service provider for attending as a witness for a specific qualification test. Only when the State formally informs the Service provider that there will be no witness, the Service provider may go on with a specific qualification test. The State shall be free to determine which expert will be attending as a witness by a specific qualification test. This can also be a third party.

The System Verification Reviews (SVR) shall be conducted by the Service provider prior to delivery of the first aircraft.

Prior to each SVR the Service provider shall present the Test Plan (TP) to the State for approval. Prior to each FQT a Test Readiness Review (TRR) shall be conducted under the responsibility of the Service provider. The State approves the TRR prior to the conduct of the test. After each SVR the Service provider shall prepare a Test Report (TR) and present it to the State for approval.

Before starting the delivery of the series, the Service provider shall perform a Factory Acceptance Test (FAT). In the FAT the Service provider demonstrates that each aircraft in its final configuration as part of the series production conforms to the requirements, specifications and documentation.

Final aircraft acceptance, including cockpit-, mission-, safety equipment, operational and maintenance crew as well as aviation safety certification and processes shall be based on an Acceptance of compliance Test Procedure (ATP) (as mentioned in agreement article 12 – VERIFICATION). The ATP shall describe all tests necessary to demonstrate the compliance to the requirements in the operational environment.

The ATP will contain at least the following information:

- how and when acceptance tests shall be performed;
- the authorities who are involved;
- test conditions;
- the way in which results shall be recorded;
- the procedure for repair of failures.

Failures are recorded in a test log, indicating the period in which failures must be repaired. After completion of the ATP, the test log must be signed by the State and the Service provider. If, during the ATP, failures turn out to be such that further testing would give unreliable results, the ATP shall be stopped and failures must be repaired prior to continuation of the ATP. After the failures have been repaired, the acceptance tests concerning that particular system or item shall be performed once more.

4.5 Evaluations

Mission equipment status and in particular equipment failures shall be recorded daily by the crew in a logbook provided by the Service provider. The State's Project Coordinator shall have full disclosure of the logbook upon request and the intended corrective actions and timelines to rectify the equipment failures.

The Project Coordinator shall be able to assign State personnel to observe missions on-board the helicopter with the aim to evaluate mission effectivity and performance of the Service provider.

Attachment A Equipment description

a. Auto pilot

Parameters	Characteristics
IFR conditions	approved for missions under Instrument Flight Rules (IFR) conditions.
Autohover	4-axis stabilization system autohover.
Coupling	coupling between AP and NAV/FMS-search patterns

b. V/UHF homing device.

Parameters	Characteristics
Frequency	Scan emergency channels 121.5, 156.8, 243.0 and 406.025 MHz, able to monitor all VHF/UHF frequency bands. When homing on one channel the other channels must be available for monitoring
Indications	relative bearing and signal strength

c. HF radio

Parameters	Characteristics
Frequency range	2-30 MHz
Memory	at least 20 channels
Adjustment	to tenths of kHz
Range	Typical range under standard Caribbean conditions during daylight at least 750 Nm.

d. VHF AM radio

Parameters	Characteristics
Frequency range	30-87.975 MHz, 108-156 MHz
Memory	at least 20 channels
Range	at least 50 Nm

e. VHF FM radio

Parameters	Characteristics
Frequency range	30-87.975 MHz;156.000-174.000 MHz
Memory	all maritime channels (including 16, 67 and 73) and at least 2 private channels (96 and 97 high)

f. UHF radio

Parameters	Characteristics
Frequency range	225-399.875 MHz
Memory	at least 4 channels
Range	at least 50 Nm

g. SATCOM (BLOS communication)
Two SATCOM-radios shall be installed in the aircraft (one active, one hot backup) and shall be used for voice, data & video-transmissions. Data and video transmission shall be controllable from the Hoist Operator screen.

h. Secure VHF MOTOROLA DM4000 series (or compatible system)
This radio shall provide secure LOS communications between DCCG units. Frequency range shall be between 138-174, 403-470,450-520, 806-870 MHz. Power requirement is 5W as a minimum.

i. Communications system selection
Each crewposition shall have the possibility to select and receive 0, 1 or a selection of the communication radios and systems at the same time and be equipped with an Internal Communication System (ICS) to communicate with all other stations in the aircraft. Main crew positions shall be able to transmit with each radio/communication system. It shall be possible to separate ICS in the cockpit from ICS in the cabin.

j. Automatic Identification System (AIS)
The aircraft shall be equipped with an AIS receiver for the determination of position, identity, tracking, speed, next port of call, call-number and other information (dangerous goods, owner) of vessels equipped with a transponder.

k. Warship Automatic Identification System (W-AIS)
Determination full message transponding and reception including position, identity, tracking, speed, of DCCG units equipped with a transponder. The W-AIS functionality shall be integrated in the Mission Management System.

l. Radar
The radar is used as surface radar for SAR. It shall be combined with the weather radar.

The radar is primarily used to detect survivors in a raft or small boat. It is also used to build up a RSP which is used to direct rescue vessels to the position of survivors.

Parameters	Characteristics
Coverage	Minimum 110 degrees (at least 55 degrees left and right of a/c nose), unobstructed.
Modes	Sea surface search (with sea clutter filter), weather avoidance
Detection capability	Detection of small boats or bouys with a RCS of 1 M2 down to a minimum range of 450 feet and detection range 5 Nm.

m. EO/IR

Parameters	Characteristics
Sensor	HD Multi-Sensor – Multi Spectral Imaging System

	HD Thermal Imager 3-5 micron range, Full HD daylight (optimized for the Caribbean area)
EO/IR control and presentation on screen	Controllable by Hoist Operator. Presented at Hoist Operator screen with slave on FMS at pilot and co-pilot position.
Field of view	Minimum of two selections, small and large.
Azimuth	360 degrees unobstructed slew coverage.
Turret	Retractable or equivalent method of lens protection
Auto tracking	auto track and auto scan functionality included
GPS position	GPS position, date and time info on at least operator station console and visible on all recordings and still images.
EO/IR data recording 1	EO/IR video data including GPS position, date and time recorded in digital (MPEG) format with a minimum of 8 hours HD storage time. The used format/container and codec must remain compatible with commonly used hard- and software for at least the contract duration period. Replay while recording possible.
EO/IR data recording 2	EO/IR still image data including GPS position, date and time recorded in digital JPEG format.
Slewing	Slewing of EO/IR sensor on radar, AIS, W-AIS and/or mission system contacts. Slewing in both bearing and azimuth
Desired	1. Integrated laser illuminator for identification at night
	2. Optical spotter-scope daylight and low light spotter (due to dusk/dawn). 1080p or higher.

n. Autonomous optical detection

Autonomous optical detection capability to compliment the flight crew in optical search for object on the sea surface.

Parameters	**Characteristics**	
Tilt	+10 to -90 degrees	
Coverage	180 degrees (90 degrees left and right of a/c nose)	
Detection capability	Capability to detect objects at 400 ft flying altitude with sea state 3 and with 90% probability of detection at an search speed of 110 kts.	
Control and presentation on screen	Controllable by Hoist Operator. Presented at Hoist Operator screen with slave on FMS at pilot and co-pilot position.	
	Objects	Range (Nm)
	Persons in Water	1.5
	Liferaft	3.5
	20 feet fast boat	7.5
Slewing	Capability to support slewing of the EO/IR sensor to the object as detected by this autonomous optical detection capability	

o. Droppable liferaft
Self-inflating liferaft equipped in accordance with SOLAS-regulations for a minimum of 6 persons. EPIRB 406 MHz available in raft.

p. Fixed searchlight

Parameters	Characteristics
Strength	at least 3.5 million Candela, NVG-compatible
Source	aircraft electrical powered
Controls	Controllable from pilot and co-pilot position. Horizontal and vertical plane.

q. Location markers
The helicopter must have a capability to manually release location markers (smoke location markers) upon detection of a PIW or other object.

Parameters	Characteristics
Release from a/c	Manually triggered
Storage Capacity	a minimum of 3 location markers shall be available for each mission

r. Self Locating Datum Marker buoys
The helicopter must have a capability to manually release Self Locating Drift Marker Buoy (SLDMB) to determine sea current.

Parameters	Characteristics
Release from a/c	Manually triggered
Storage Capacity	a minimum of 2 SLDMB buoys must be stored and shall be available for each mission

s. MEDEVAC kit
The helicopter shall carry a MEDEVAC kit on board the helicopter during mission consisting of the items mentioned in Attachment C as a minimum.

t. Digital camera

Parameters	Characteristics
Digital photo camera	Digital photo camera for the purpose of collecting still imagery of targets of interest. Minimum full frame 20.8 megapixel CMOS sensor. Minimum camera lens focal length range 18-400 mm.

Attachment B Responsibilities for the provision of specific equipment and services between State and Service provider

In order to clearly define the responsibilities between State and Service provider for the provision of operational equipment, support equipment, safety equipment and training, the following equipment shall be provided by the Service provider for use and/or participation by the State.

Mission Equipment				
A. Self Locating Datum Marker Buoys (SL-DMB)	In conformity with Attachment A	provision of initial stock, warehousing, servicing and replacement during full contract period. Satellite communication contract and monitoring software to be included	Estimated yearly operational requirement: 5 units	Operational requirement does not account for mandatory or company training and/or pilot standardization
B. Location Markers (pyrotechnic signal)	In conformity with Attachment A	provision of initial stock, warehousing, servicing and replacement during full contract period.	Estimated yearly operational requirement: 30 units	Operational requirement does not account for mandatory or company training and/or pilot standardization
Support Equipment and Provisions				
C. All required maintenance and support equipment for sustaining required platform and flight operations, ground and in flight training.	E.g. but not limited to: Auxiliary airco unit, GPU, tugs, pushbacktractor, maintenance stands / ladders, maintenance and service equipment, tool storage, reserve stores, etc. Office supplies and IT hardware.	provision of initial stock, warehousing, servicing and replacement during full contract period.	N/A	Supplied by the State: , Aircraft Hangar; corporate and maintenance office space, storage space, kitchen, shower and laundry facilities, crewroom, (all this within the available and existing infrastucture of the DCCG AIR STATION); office furniture (limited to chairs, desks and cabinets); availability of landline telcom and internet

				connection; public utilities and facilities; cleaning services and security as required by the State; Airfield, work space and ramp emergency and safety installations and equipment as required by authorities.

Attachment C Medical Equipment

The following medical equipment shall be provided in the helicopter as a minimum. The equipment shall be logically arranged in the helicopter and carry-on bags as required. The equipment shall be recognizable, ready for use and within easy reach of the crew.

Cardiac Monitor + [redacted] including:	
- Lifepak Monitor (securely mounted)	1
- Standard Monitoring set (coiled NIBP hose, 4-lead ECG, Pulse oximeter)	1
- Disposable BP Cuff Adult	1
- Disposable BP Cuff Adult, extra large	1
- ECG Dots (pack)	1
- Defibrillator therapy cable attached	1
- Adult Defibrillator therapy pads	1
- Paediatric defibrillator therapy pads	1
- Disposable BP Cuff Child*	1
- Disposable BP Cuff Infant*	1
- SPO2 Finger Probe Paediatric (single use)	1
- Capnography ETT airway adapter (adult/paed)	1
- Capnography ETT airway adapter (infant)	1
- Nasal capnography (adult)	1
- Nasal capnography (paed)*	1
- Spare printer paper	1
- Spare batteries set	1

Medical gases and support including:	
- Entonox Cylinder & regulator	1
- Mouthpieces	2
- Oxygen Cylinders 2L	2
- Oxygen (spare) 2L	1

General medical equipment	
- Nebulizer MAXINEB	1
- I-gel size 3	1
- I-gel size 4	1
- I-gel size 5	1
- Aspirator emergence	1
- Mask valve BVM	1
- Catheter mount	2
- NRB with O2 tubing	1
- O2 nasal cannula	1
- Haemorrhage control dressing 6"	2
- Haemorrhage control dressing 4"	2
- Haemorrhage control bandage 4"	1
- CELOX roll	2
- Penha haft roll small	2
- Penha haft roll medium	1
- Penha haft roll large	1
- Dressing medium 12 x 12	2
- Klinipress compress gauze	6

- Trauma dressing 10 x 18	1
- IV drip-set	3
- Sharps container	1
- Sterile gauze 10 x 10	15
- Medical roll dressing (12 x 12 cm)	2
- Medical roll dressing (18 x 18 cm)	4
- Soft roll dressing	2
- Medical tape roll 18 cm	1
- Self-adhesive dressing roll 2 inch	1
- Self adhesive dressing roll 3 inch	1
- Finger dressing	1
- Triangular bandage	2
- Bandage roll (5 x 8 cm)	2
- Trauma dressing	1
- Eye dressing	2
- IV catheter 17G	2
- IV catheter 18G	2
- IV catheter 20G	2
- IV cannula 16G	2
- NPA size 7 TIMESCO	1
- NPA size 8 TIMESCO	1
- NPA size 9 TIMESCO	1
- Needle 21G	3
- Needle 23G	3
- Needle 25G	3
- OPA 5 cm	1
- OPA 5,5 cm	1
- OPA 6 cm	1
- OPA 8 cm	1
- OPA 10 cm	1
- BGL/BM test strips	30
- Blunt fill needle	3
- Medical shears	1
- Medical tape 1 inch	2
- Medical tape 2 inch	1
- Medical scissors	1
- Spreader	1
- Pen light	1
- Thermometer, oral	1
- MAGILS adult	1
- Tweezers	1
- Wound cleansing wipes	14
- Blood glucometer	1
- Finger stick devices	1
- Vinger stick needles	10
- Water gel burn dressing 30 x 40 cm	2
- Water gel burn dressing 10 x 10 cm	1
- Large wound amputation dressing	1
- Klinipress compress gauze	10

- Foil blanket		1
- Satefy glasses		1
- Portable O2 sensor		1
- Portable BP cuff		1
- Ice pack		2
- Sterile saline spray		1
- 500 ml saline bag		1
- Asherman chest seal		1
- Medical wrap blanket		1
- Manual suction pump		1
- Suction catheter, rigid		1
- Pelvic splint		1
- SAM splint		2
- Bio-mask		3
- Surgical gloves		7
- Foam hearing protection		10
- Hazmat bag		1
- C-collar, multi-neck		1
- Vacuum Splints - Pack to contain:	Large (120cm)	1
	Medium (90cm)	1
	Small	1
- Suction Pump		1
- Burns dressing pack		1
- Maternity Pack		1
- Clinical Wipes		1
- Scoop Stretcher		1
- Infection control pack		1
- Vacuum mattress and pump		1
- Spare BVM		1
- Longboard and head blocks		1
- Mechanical cardiopulmonary resuscitation (CPR) device		1
- Fluid pack 500 ml		1
- Stretcher		1

Drugs and syringes including:

- Adrenaline 1:10,000 (pre-filled)	6
- Adrenaline 1:1000	2
- Atropine 600mcg/1ml	5
- Amiodarone 300mg (pre-Filled)	2
- Frusemide 20mg	2
- Hydrocortisone 100mg	2
- Aspirin 300mg (strip)	1
- Buccal Gtn (strip)	1
- GTN spray	1
- Salbutamol 2.5mg	4
- Salbutamol 5mg	4
- Atrovent 250mcg	2
- Atrovent 500mcg	2

- Hypostop	2
- Glucagon	1
- Benzylpenicillin 1.2g	2
- Chlorpheniramine 10mg	2
- Ondansetron 4mg in 2ml	2
- Metoclopramide 10mg	1
- Calpol (paracetamol) sachets	4
- Paracetamol tablets (500mg) strip	1
- Ibuprofen tablets (200mg) strip	1
- Tranexamic Acid 500mg/5mls	2
- Saline pre-drawn syringe 5ml	5
- Luer lock caps	5
- Ketamine 200mg in 20ml	2
- Thiopentone 500mg powder	1
- Suxamethonium 100mg in 2ml	2
- Rocuronium 50mg in 5ml	4
- Midazolam 5mg in 5ml	4
- Ondansetron 4mg in 2ml	2
- Ephedrine 30mg /ml in 1ml	2
- Flumazenil 500mcg in 5ml	2
- Naloxone 400mcg in 1ml	2
- Cefotaxime 1g vial	1
- Metaraminol 10mg in 1ml	2
- Lignocaine 1% - 10ml	2
- Bupivicaine 0.5% - 10ml	2
- Tranexamic Acid 500mg in 5ml	4
- Atropine Sulphate 600mcg in 1ml	2
- Water For Injection - 10ml	8
- Saline Prefilled Flush - 10ml	4
- 1ml Syringe	2
- 2ml Syringe	2
- 5ml Syringe	9
- 10ml Syringe	11
- 20ml Syringe	4
- 2.5ml Syringe	4
- 1ml Syringe	4
- Filter Straws	9
- Needles 21G (Green)	7
- Needles 23G (Blue)	7
- Needles 25G (Orange)	7
- Drawing Up Needles	9
- Drug Labels	4
- Syringe bungs	10
- RSI Checklist	1
- MAD (mucosal atomiser device)	2
- Intranasal Dosing Chart	1

Attachment D Banned and Restricted Substances

This Attachment consists of 2 parts:
Procedure English (April 2015)
List (May 2017)

Date of publication: April 2015

RESTRICTIONS IN THE USE OF HAZARDOUS SUBSTANCES IN EQUIPMENT AND CONSUMABLES

1. Introduction

1.1. When formulating the technical requirements for the procurement of equipment and consumables, the Defence Materiel Organisation (DMO) also takes the health, safety and environmental requirements into account. These last requirements have to cover the entire lifecycle from procurement, use until disposal.

1.2. When (potential) Service providers or manufacturers are being contacted by the DMO, the DMO informs them on the restrictions in the use of hazardous substances. The reasons for these restrictions can be as follows:
a. Ban or limitation on (certain) uses of hazardous substances;
b. Hazardous substance is mentioned on a priority list;
c. Emission of hazardous substances;
d. Radiation;

2. Categories of uses and hazardous substances

2.1 In order to put restrictions to the procurement of hazardous substances, the DMO has publicised list of "Banned and Restricted Substances", summarised "The List". The list is divided in a total of ten categories, based on uses as well as on limitations originating from law or the MOD's internal regulations.

2.2 The list has the following categories of uses and/or substances:
1. Industrial chemicals, used for the maintenance of equipment;
2. Fire-extinguisher;
3. Corrosion protection;
4. Electronics / lighting;
5. Textiles, clothing, personal equipment and shoes;
6. Refrigerants;
7. Radioactive sources;
8. Ammunition;
9. Nano materials;
10. Biocides
11. Asbestos.

2.3 The List has the following list of restrictions:

1A. The legislator has issued a generic ban for the use of the hazardous substance;
1B. The legislator allows the use of the hazardous substance for a specific described purpose. The legislator has issued a ban for all other – not described - purposes.
1C. The legislator has issued a ban for the use of the hazardous substance.
The state can request the competent authority for an (specific) exemption. The state is reluctant to apply for an exemption and will only apply for an exemption when no alternatives are available.
The competent authority can issue (specific) requirements to the exemption;
2A. The state does not allow the use of the hazardous substance. Sufficient alternatives are available;
2B. The state discourages the use of the hazardous substance. In case the Service provider has to use the substance in equipment, he has to inform the contract manager in writing:
- Which alternatives have been investigated;
- What is the reason, that he has not chosen one of the alternatives;
- Where the substance is present in the equipment

3A. The state registers the use of the hazardous substance. The contract manager from the DMO reports the use of the hazardous substance in the Environmental and Occupational Health and Safety chapter of the Introduction manual.

2.4 The ban to use the hazardous substance / obligation to register the use of the hazardous substance is not valid if the maximum allowed level or detection level mentioned in the appropriate table has not been exceeded.

2.5 When a Service provider tenders for a contract, he has to inform the responsible manager of the DMO in writing:

- That he will not use any hazardous substance, which has been banned under the restriction categories 1A, 1B, 1C and/or 2A;
- Which consumables and or components contains one or more substances of restriction 2B and their intended use. The Service provider has to actively support the responsible manager within the DMO in his search for an alternative - less hazardous – substance of restriction 2B;
- Which consumables and or components contains one or more substances of restriction 3A.

2.6 The responsible manager will make a risk assessment on the basis of the supplied information. The result of this risk assessment will be as follows:

- The tender may be turned down, when the offered consumable / equipment contains one or more hazardous substances of the restriction category 1A, 1C and/or 2A.
In case the responsible manager intents to accept the tender, he has to apply for permission from the Central Staff (category 1A, 1C) or Managing Director of the DMO (category 2A);
- The presence of substances of category 2B will be assessed during the evaluation of the tender.

RESTRICTIONS IN THE USE OF HAZARDOUS SUBSTANCES IN EQUIPMENT AND CONSUMABLES

This publication on restrictions in the use of hazardous substances in equipment and consumables is part of the Netherlands Ministry of Defence (NLD MOD) policy on Health, Environment and Safety (HE&S). This publication is part of the Ministries publication MP 12-100.

Annex 1:Operating chemicals;

Substance / product	CAS no.	Measure	Legislation	Restriction category
Benzene	71-43-2	Legislation permits use as a component of motor fuels	Directive 98/70/EG	1B
Benzene	71-43-2	Legislation prohibits use for all other purposes. Upper limit may not exceed: 0,1 % by weight	REACH Regulation, annex XVII, section 5 (Regulation 1907/2006/EC).	1A
Chloroparafines (C10 – C13)		Legislator prohibits use in metal working fluids.	REACH Regulation,Candidate list annex XIV (Regulation 1907/2006/EC)	1A
		MinDef does not allow the use in lubricants, Upper limit may not exceed: 0,1 % by weight	REACH Regulation,Candidate list annex XIV (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.4	2A
Organotin compounds: - Tributyltin - Trifenyltin - Tributyl(vinyl)tin - Azocyclotin - Fentinhydroxyde - Trifenyltinacertate	 688-73-3 36643-28-4 7486-35-3 41083-11-8 76-87-9 900-95-8	Legislation prohibits use in antifouling paint.	REACH Regulation, annex XVII, section 20 (Regulation 1907/2006/EC)	1A
Cybutryne	28159-98-0	MinDef discourages use in anti-fouling paint	International Convention on the Control of Harmful	2B

Substance / product	CAS no.	Measure	Legislation	Restriction category
			Anti-Fouling System on Ships	
Mercury compounds		Legislation prohibits use in antifouling paint.	REACH Regulation, annex XVII, section 18 (Regulation 1907/2006/EC)	1A
Fenylmercuryacetate Fenylmercurypropionate Fenylmercury-2-ethylhexanonate Fenylmercuryoctonate Fenylmercury-neodecanoate	62-38-4 103-27-5 13302-00-6 13864-38-5 26545-49-3	Legislation prohibits use in mixtures. Upper limit may not exceed: 0,01 % by weight.	REACH Regulation, annex XVII, section 62 (Regulation 1907/2006/EC)	1A
Cobaltchloride	7646-79-9	MinDef does not allow use as a medium for drying.	REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC)	2A
Lead compounds: Among others Leadcarbonate Leadsulfate	 598-63-0 7446-14-2	Legislation prohibits use in paints.	REACH Regulation, annex XVII, section 16 and 17 (Regulation 1907/2006/EC)	1A
Silica crystalline; Quarts Cristoballite Tridynite	 14808-60-7 14464-46-1 15468-32-3	MinDef discourages use in paint, sealants and the like.	Health & Safety Decree, chapter 4, article 4.4	2B

Substance / product	CAS no.	Measure	Legislation	Restriction category
			CLP Regulation, annex I, chapter 3.5 (Regulation 1272/2008/EC)	
Glycol ethers - 2-ethoxyethanole - 2-ethoxyethylacetate - 2-methoxyethanole - 2-methoxyethylacetate - 2-methoxypropanole	 110-80-5 111-15-9 109-86-4 110-49-6 1589-47-5	MinDef discourages use as solvent	Health & Safety Decree, chapter 4, article 4.4	2B
- Nonylphenol - Nonylfenol/ethoxylates - 4-para0nonylphenole - Octylfenol - Para-tert-octylfenol - 2,4,6-tri-tert-butylfenol	25154-52-3 (84852-15-3) 9016-45-9 104-40-5 1806-26-4 140-66-9 732-26-3	MinDef discourages use in paint	REACH Regulation, annex XVII, section 16 and 17 (Regulation 1907/2006/EC)	2B
Chlorinated hydrocarbons, used as a solvent: Hexachloroethane Pentachloroethane 1,1,1,2 Tetrachloroethane	 67-72-1 76-01-7 630-20-6 79-34-5	Legislation prohibits use	Directive 76/769/EC	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
1,1,2,2 Tetrachloroethane 1,1,2 Trichloroethane Trichloroethane Trichloromethane 1,2-Dichloroethane 1,1-Dichloroethylene Trichloorbenzene	79-00-5 79-01-6 67-66-3 107-06-2 75-35-4 120-82-1			
Other chlorinated hydrocarbons		MinDef discourages use	Health & Safety Decree, chapter 4, article 4.4	2B
2-Naftylamine and it's salts Benzidine and it's salts 4-Nitrobifenyl 4-Aminobifenyl, xenylamine and it's salts	91-59-8 92-87-5 92-93-3 92-67-1	Legislation prohibits use.	REACH Regulation, annex XVII, section 12 untill 16 (Regulation 1907/2006/EC)	1A
Hydrochlorofluorcarbons HCFC's), used as solvent.		Legislation prohibits use.	Regulation on substances that deplete the ozone layer (Regulation 1005/2009/EC)	1A
Dichloromethane	75-09-2	Legislation prohibits use as paintstripper.	REACH Regulation, annex XVII, section 59, (Regulation 1907/2006/EC)	1A
Volatile Organic Substances (VOS)		According to law, a paint system to be applied to military equipment may not contain quantities of the following volatile	Directive 2004/42/EC	1B

Substance / product	CAS no.	Measure	Legislation	Restriction category
		organic substances in excess of those specified hereafter (based on the ready to use product): • Pretreatment: 850 g/l • Surface cleaning: 200 g/l • Putty, filling 250 g/l • Surfacer/sealer 540 g/l • General (metal)primers: 540 g/l • Wash primers: 780 g/l • Water-based paints: 140 g/l • High solid paints: 420 g/l • Finish coatings: 420 g/l • Special coatings for munitions and other military equipment: 840 g/l Volatile organic substances* are hydrocarbons with a vapour pressure > 0,01 kPa (0,1 mbar).		
Cadmium	7440-43-9	Legislation prohibits use in coatings	REACH Regulation, annex XVII, section 23,	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
		Upper limit may not exceed 0,01 % by weight	(Regulation 1907/2006/EC)	
Substances, mentioned in annex XIV of the REACH Regulation		Legislation prohibits use in substances and mixtures, unless an authorisation has been granted	REACH Regulation, annex XIV (Regulation 1907/2006/EC)	1A
CMR-substances.		According to law, the use of carcinogenic, mutagenic and/or reprotoxic substances is prohibited, in case a technically suitable alternative is available. Upper limit may not exceed; 0,1 % by weight.	REACH Regulation, annex XVII, section 28, 29 and 30 (Regulation 1907/2006) Health & Safety Decree, chapter 4, article 4.17 (Regulation 1272/2008/EC) CLP Regulation, annex I chapter 3.5, 3.6 and 3.7 (Regulation 1272/2008/EC)	1A
Substances classified as acute toxic and/or suspected CMR.		MinDef discourages use of substances, classified by CLP Regulation as H 300, H301, H 310, H 311 and/or H 330, H 331 respectively H 341, H 351 and/or H361. Upper limit may not exceed:	Health & Safety Decree, chapter 4, article 4.4 CLP Regulation, annex I chapter 3.1, 3.5, 3.6 and	2B

Substance / product	CAS no.	Measure	Legislation	Restriction category
		- H 300, H 301, H 310, H 311, H 330, H 331, H 351, H 361: 0,1 % by weight - H 341: 1 % by weight.	3.7 (Regulation 1272/2008/EC)	
Sensitising substances		MinDef discourages use of substances, classified by CLP Regulation as H 334 and/or H 317 Upper limit may not exceed : - H 334 (cat 1A) 0,1 % by weight - H 317 (cat 1A) 0,1 % by weight - H 334 (cat 1B) 1,0 % by weight - H 317 (cat 1B) 1,0 % by weight	Health & Safety Decree, chapter 4, article 4.4 CLP Regulation, annex I chapter 3.1, 3.5, 3.6 and 3.7 (Regulation 1272/2008/EC)	2B

Annex 2: Fire-extinguishing agents

Substance / product	CAS no.	Measure	Legislation	Restriction category
Halon 1211 Halon 1301	353-59-3 75-63-8	Legislation exclusively permits use for existing critical applications.	Annex VI of Regulation 1005/2009/EC	1B
Halon 1211 Halon 1301	353-59-3 75-63-8	Legislation prohibits the use in new military vehicles, ships and ground equipment	Annex VI of Regulation 1005/2009/EC	1A
Halon 1211 Halon 1301	353-59-3 75-63-8	MinDef discourages use in new aicraft.	Annex VI of Regulation 1005/2009/EC	2B
Halon 1011 Halon 2402	74-97-5 124-73-2	Legislation prohibits use.	Regulation 1005/2009/EC	1A
Perfluorhydrocarbons: - Perfluormethane - Perfluorethane - Perfluorpropane - Perfluorbutane - Perfluorpentane - Perfluorhexane - Perfluorcyclobutane	 75-73-0 76-16-4 76-19-7 355-25-9 678-26-2 355-42-0 115-25-3	Legislation prohibits use.	Regulation 1005/2009/EC	1A
Perfluoroctanoic acid and derivates	335-67-1	MinDef discourages use.	POP Regulation (Regulation 757/2010/EC)	2B

Annex 3: Corrosion protection / surface treatment

Substance / product	CAS no.	Measure	Legislation	Restriction category
Cadmium	7440-43-9	MinDef does not allow new military land vehicles, ships and equipment to be supplied with a corrosion resistant layer based on galvanised cadmium plating. Sufficient alternatives are available.	REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC)	2A
Cadmium* en cadmium compounds: Cadmiumoxide Cadmiumsulfide	7440-43-9* 1306-19-0 1306-23-6	MinDef does not allow use of cadmium in new deliveries of electronic contacts unless: • there are no technically equivalent alternatives; • the OEM of the aircraft prohibits use of non-cadmium electronic contacts.	ROHS Regulation (Regulation 2011/65/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2B
Chromium(VI)compounds	18450-29-9	According to law, military land vehicles, ships and equipment may not contain a corrosion resistant layer based on chromium(VI)compounds. Sufficient alternatives are available.	REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17	2A

Substance / product	CAS no.	Measure	Legislation	Restriction category
			CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	
Chromium(VI)compounds	18450-29-9	According to law, the use of chromium(VI) in coating system to be applied on aircraft is prohibited for these parts of the aircraft, for which the Original Equipment Manufacturer (OEM) has certified the use of a non-chromium(VI) coating system. In case a chromium(VI)-containing coating system is to be applied on (parts of) an aircraft, the concentration of the chromium(VI)compounds in the coating system has to be as low as technically achievable.	MinDef Policy REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2A
Lead compounds: Among others Leadcarbonates Leadsulphate	 598-63-0 1319-46-6 7446-14-2	Legislation prohibits use in a corrosion protection layer	REACH Regulation, annex XVII, section 16 and 17 (Regulation 1907/2006/EC)	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Lead compounds: Leadchromate Leadchromate molybdate	7758-97-6 235-759-9	MinDef does not allow use.	REACH Regulation, Candidate list annex XIV (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2A
Silica crystalline; Quarts Cristoballite Tridynite	14808-60-7 14464-46-1 15468-32-3	MinDef discourages use in paints, sealants and the like.	Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2B

Annex 4: Elektronics / lighting

Substance / product	CAS no.	Measure	Legislation	Restriction category
Lead compounds	7439-92-1	MinDef MOD discourages use	ROHS Regulation (Regulation 2011/65/EC)	2B
Flame retardants: PBB TRIS PBDE (PBBE) PBDO (PBBO)	 59536-65-1 126-72-7	Legislation prohibits use. Upper limit that may not be exceeded: 0,1 % by weight	ROHS Regulation (Regulation 2011/65/EC)	1A
Cadmium* en cadmium compounds: Cadmiumoxide Cadmiumsulfide	7440-43-9* 1306-19-0 1306-23-6	MinDef does not allow use of cadmium in new deliveries of electronic contacts unless: • there are no technically equivalent alternatives; • the OEM of the aircraft prohibits use of non-cadmium electronic contacts.	ROHS Regulation (Regulation 2011/65/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2B
Beryllium* en berylliumcompounds: Beriliumchloride Beriliumfluoride Beriliumhydroxide Beriliumsulfate	7440-41-7* 7787-47-5 7787-49-7 13327-32-7	MinDef discourages use in electronics.	Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	2B

Substance / product	CAS no.	Measure	Legislation	Restriction category
	13510-49-1			
Lithium batteries		Transport legislation prohibits the transportation of lithium batteries, unless they successfully passed all required tests. Elucidation: The manufacturer must supply a statement, that the battery has successfully passed all legally required tests.	UN-manual of Tests, and Criteria, Part III, subsection 38.3	1B 3A
Batteries containing cadmium	7440-47-7	MinDef does not allow use of batteries containing cadmium, unless no technically equivalent alternatives are available or the aircraft OEM prohibits use of alternatives. Upper limit may not exceed: 0,002 % by weight.	Directive 2013/56/EC	2B
Batteries		From 01-01-2014, the Service provider is required to report the presence of batteries in equipment	Directive 2013/56/EC, paragraph 11	3A
PVC		MinDef discourages the use of PVC in electric wiring, especially in closed spaces	MinDef policy	2B

Annex 5: Textiles, articles of clothing, personal gear and shoes

Substance / product	CAS no.	Measure	Legislation	Restriction category
Azo-dyes: 4-Aminodiphenyl Benzidine 4-Chloro-o-toluidine 2-NMaphtylamine o-Aminoazotoluene 2-Amino-4-Nitrotoluene 2,4-Diaminocanisole 4,4-Diaminodiphenyl-methane 3,3-Dichlorobezidine 3,3-Dimethoxybenzidine 3,3-Dimethylbenzidine 3,3-Dimethyl—4,4-diaminiphenylmethane	 92-67-1 92-87-5 95-69-2 91-59-8 97-56-3 99-55-8 615-05-4 101-77-9 91-94-1 119-90-4 119-93-7 838-88-0 106-47-8 120-71-8 101-14-4 101-80-4 139-65-1 95-80-7 95-53-4 137-17-7 90-04-0 60-09-3	Legislation prohibits the use. All Azo-dyes who might disintegrate into amines which are (suspected to be) carcinogenic are mentioned on this list. Upper limit may not exceeded: 30 mg/kg for each of the substances mentioned on this list	REACH Regulation, annex XVII, section 43 (Regulation 1907/2006/EC)	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
p-Chloroaniline p-Cresidine 4,4-Methylene-bis-2-chloroaniline 4,4-Oxydianiline 4,4-Thiodianiline 2,4-Toluenediamine o-Toluidine 2,4,5-Trimethylaniline o-Anididine p-Amino-azobenzene 2,4-Xylidine 2.6-Xylidine **C**39**H**23**Cl**C**r****N**7 **O**12**S**.2**N** **C**46**H**30**C**r**N**10**O**20**S**2.3**N**	95-68-1 87-62-7 118685-33-9			
Asbestos n.o.s. Actinolite Asmosite Anthofylite Chrysolite Tremolite Crocidolite	1332-21-4 77536-66-4 12172-73-5 77536-67-5 12001-29-5 77536-68-6 12001-28-4	Legislation prohibits use Not detectable for any asbestos mentioned in the list.	REACH Regulation, annex XVII, section 6 (Regulation 1907/2006/EC)	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Disperse dyes: Disperse blue 1 Disperse bleu 35 Disperse blue 106 Disperse blue 124 Disperse orange 3 Disperse orange 37/76 Disperse orange 37 Disperse orange 76 Disperse yellow 76 Disperse yellow 3 Disperse blue 3 Disperse blue 7 Disperse blue 26 Disperse blue 102 Disperse yellow 1 Disperse yellow 9 Disperse yellow 39 Disperse yellow 49 Disperse orange 1 Disperse red 11 Disperse red 17 Disperse brown 1	 2475-45-8 12222-75-2 12223-01-7 61951-51-7 730-40-5 13301-61-6 12223-33-5 51811-42-8 2832-40- 82475-45- 83179-90-6 3179-90-6 3860-63-7 12222-97-8 119-15-3 6373-73-5 12236-29-2 54824-37-2 2581-69-3 2872-48-2 3179-89-3 23355-64-8	Legislation prohibits use MinDef does not allow use. Disperse dyes, which are suspected of skin sensitisation and cause allergic reactions, are mentioned in this list. Upper limit that may not be exceeded: 5 mg/litre for each of the substances mentioned on this list.	REACH Regulation, annex XVII, section 43 (Regulation 1907/2006/EC)	1A 2A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Flame retardants: Tetrabromodiphenyl ether Pentabromodiphenyl ether Hexabromodiphenyl ether Heptabromodidhenyl ether Perfluoroctane sulfonic acid and derivates Bis-(2,3-dibromopropyl) phosphate	5412-25-9 5455-55-1	The legislator prohibits use. The substances, mentioned on this list are persistent for the environment and are also suspected to harm the human immune system. Upper limit that may not be exceeded: 50 mg/kg.	POP Regulation (Regulation 757/2010/EC)	1A
Formaldehyde	50-00-0	Legislation prohibits use Upper limit that may not be exceeded: 100 ppm.	Consumer product safety decree formaldehyde d.d. 22-03-2001	1A
Cadmium	7440-43-9	MinDef does not allow use Upper limit that may not be exceeded: 100 ppm	REACH Regulation, annex XVII, section 23 (Regulation 1907/2006/EC)	2A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Leather containing Chromium(VI)	7440-47-3	Legislation prohibits use of leather articles contains chromium(VI), which comes in contact with the skin. Legislation prohibits use of articles containing chromium(VI), in case these leather parts are in contact with the skin. Upper limit may not exceed: 3 mg/kg (0,0003 % by weight) of the total dry weight of the leather.	REACH Regulation, annex XVII, section 47 (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5 (Regulation 1272/2008/EC)	1A
Mercury	7439-97-6	Legislation prohibits use. Upper limit that may not be exceeded: 1 ppm	REACH Regulation, annex XVII, section 18 (Regulation 1907/2006/EC)	1A
Lead	7439-92-1	MinDef does not allow use. Upper limit that may not be exceeded: 100 ppm.	Government policy on sustainable procurement	2A
Nickel	7440-02-0	MinDef does not allow use Upper limit that may not be exceeded: 0,5 ug/cm2/week.	REACH Regulation, annex XVII, section 27 (Regulation 1907/2006/EC)	1A
Organotincompounds: - Tributyltin - Trifenyltin - Tributyl(vinyl)tin	688-73-3 36643-28-4 7486-35-3 41083-11-8 76-87-9	Legislation prohibits use. Upper limit that may not be exceeded: 0,1 gram / kilogramme.	REACH Regulation, annex XVII, section 20 (Regulation 1907/2006/EC)	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
- Azocyclotin - Fentinhydroxyde - Trifenyltinacertate	900-95-8			
Pesticides: HCH and all isomers Lindane Aldrin Chloroacne Dieldrin Endrin Heptachlor Heptachlor epoxide Isodrin Kelevane Chlordecone (keptone) Telodrin Strobane Toxaphene Hexachlorobenzene DDT DDE DDD Methoxychlor Perthane Quintozene	 608-73-4 58-89-9 300-00-2 57-74-9 60-57-1 72-20-8 76-44-8 1024-57-3 465-73-6 4234-79-1 143-50-0 297-78-9 8001-50-1 8001-35-2 118-74-1 50-29-3 72-55-9 72-54-8 72-43-5 72-56-0 82-68-8	Legislation prohibits use. (Pesticides can be present in natural fibres, especially cotton) Upper limit that may not be exceeded (valid for every separate pesticide): 0,5 ppm.	POP Regulation (Regulation 757/2010/EC) Biocide Regulation (Regulation 528/2012/EC)	1A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Solvents: Pentachloroethane Tetrachloromethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane	 76-01-7 56-23-5 630-20-6 79-34-5	Legislation prohibits use Upper limit that may not be exceeded: 1000 mg / kg.	REACH Regulation, annex XVII, section 33 untill 40 (Regulation 1907/2006/EC)	1A
Solvents: Benzene Phenol Toluene Xylene (alle isomeren.	 71-43-2 108-95-2 108-88-3 1330-20-7	MinDef does not allow use during the production process of yarn and/or fabrics.	Government policy on sustainable procurement	2A
CMR-substances		The MOD does not allow the use of Carcinogenic-, Mutagenic- and/or Reprotoxic substances.	REACH Regulation, annex XVII, section 28 until 31 (Regulation 1907/2006/EC)	2A
Methylbromide Phosphine	74-83-9 7803-51-2	MinDef does not allow the use as a disinfectant in/on packaging and/or containers	Biocide Regulation (Regulation 528/2012/EC)	2A

Substance / product	CAS no.	Measure	Legislation	Restriction category
Nano-materials		Service provider reports use to contract manager. The report must contain a risk assessment and the necessary risk management measurements The risk assessment must be based on the publication "Guidance on the protection of the health and safety of workers from the potential risks related to nanomaterials at work", Guidance for employers and health and safety practitioners, published by the European Commission, Directorate of Employment, Socials affairs and Inclusion, version June 2014. The document can be downloaded by internet.	European Commision policy	2B
Biocides		A foreign Service provider may not use a biocide for treatment of (wooden) packaging and/or containers, unless the active substance: is admitted for the intended use	Biocide Regulation (Regulation 528/2012/EC)	2A
Biocides		Legislation prohibited use for treatment of clothing, shoes etc. unless the active	Biocide Regulation (Regulation 528/2012/EC)	1B

Substance / product	CAS no.	Measure	Legislation	Restriction category
		substance is admitted for the intended use		

Annex 6: Refrigerants

Substance / product	CAR no.	Measure	Legislation	Restriction category
CFC's		Legislation prohibits use	Regulation 1005/2009/EC	1A
HCFC's		Legislation prohibits use in new refrigerators and deep-freezers.	Regulation 1005/2009/EC.	1A
		Legislation prohibits the refilling of equipment with recycled HCFC's.		
Ammonia Propane Carbondioxide	7664-41-7 74-98-6 124-38-9	MinDef does not allow use of these refrigerants in land vehicles, ships, aircraft and/or equipment.	MinDef policy	2A
HFC's		MinDef does not allow use of refrigerants with a global warming potential (GWP) of more than 2500	MinDef policy Regulation 517/2014/EC	2A
HFC's		MinDef discourages use of refrigerants with a global warming potential (GWP) of more than 150	MinDef policy Regulation 517/2014/EC	2B

Annex 7: Radioactive sources

Substance / product	CAR no.	Measure	Legislation	Restriction category
Radioactive source		MinDef does not allow use, unless the contract manager can prove that use of closed radioactive sources is a necessity. This requirement is not valid for closed radioactive sources, for whom the radiation levels do not exceed the levels mentioned in annex 1 of the Radiation Protection Degree (2001).	Nuclear energy act	2B
Radioactive source		Service provider reports all radioactive sources to the contract manager. The report must contain the radiation levels (BeQ) of each source.	MinDef policy	3A

Annex 8: Munitions

Substance / product	CAR no.	Measure	Legislation	Restriction category
Substances, mentioned in annex XIV of the REACH Regulation		Legislation prohibits use in substances and mixtures, unless an authorisation has been granted	REACH Regulation, annex XIV (Regulation 1907/2006/EC)	1A
Depleted uranium	7440	MinDef does not allow use	MinDef policy	2A
Tungsten-Nickel-Cobalt alloy		MinDef does not allow use unless no alternative alloy is available	Health & Safety Decree, chapter 4, article 4.17	2B
Carcinogenic, mutagenic and/or reprotoxic substances (CMR-substances).		MinDef discourages use	REACH Regulation, annex XVII, section 28, 29 and 30 (Regulation 1907/2006/EC) Health & Safety Decree, chapter 4, article 4.17 CLP Regulation, annex I chapter 3.5, 3.6 and 3.7 (Regulation 1272/2008/EC)	2B
All substances		For every part of munitions, the Service provider must report:	CLP Regulation, annex I chapter 3.5, 3.6 and 3.7	3A

Substance / product	CAR no.	Measure	Legislation	Restriction category
		- name, CAS no and weight of every substance - if the substance contributes to emissions during - firing/ignition; - flight* - strike* * when applicable	(Regulation 1272/2008/EC)	

Annex 9: Nano materials

Substance / product	CAR no.	Measure	Legislation	Restriction category
Nano-materials		Service provider reports use to contract manager. The report must contain a risk assessment and the necessary risk management measurements The risk assessment must be based on the publication "Guidance on the protection of the health and safety of workers from the potential risks related to nanomaterials at work", Guidance for employers and health and safety practitioners, published by the European Commission, Directorate of Employment, Socials affairs and Inclusion, version June 2014. The document can be downloaded by internet.	European Commision policy	2B

Annex 10: Biocides and desinfectants

Substance / product	CAR no.	Measure	Legislation	Restriction category
Biocides		Legislation prohibits use, unless CTGB (NLD regulator) has admitted the active substance for the intended use	Biocide regulation (Regulation 528/2012/EC)	1B
Methylbromide Phosphine	74-83-9 7803-51-2	MinDef does not allow use as a disinfectant in/on packaging and/or containers	Biocide regulation (Regulation 528/2012/EC)	2A
Cybutryne	28159-98-0	MinDef discourages use in Anti-fouling paint	International Convention on the Control of Harmful Anti-Fouling Systems on Ships	2B
Biocides		A foreign Service provider may not use a biocide for treatment of (wooden) packaging and/or containers, unless the active substance: - is mentioned in annex 1, 1A or 1B of this directive and is admitted for the intended use	Biocide regulation (Regulation 98/8/EC)	2A

Annex 11: Asbestos

Substance / product	CAR no.	Measure	Legislation	Restriction category
Asbestos n.o.s. Actinolite Asmosite Anthofylite Chrysolite	1332-21-4 77536-66-4 12172-73-5 77536-67-5 12001-29-5	Legislation prohibits use Not detectable for any asbestos mentioned in the list.	REACH Regulation, annex XVII, section 6 (Regulation 1907/2006/EC)	1A

Substance / product	CAR no.	Measure	Legislation	Restriction category
Tremolite Crocidolite	77536-68-6 12001-28-4			

Annex 12: Reporting of substances of very high concern in (complex) objects

The Service provider must report:

- substances mentioned in the candidate list annex XIV and/or annex XIV present in a concentration greater than 0.1 % (w/w) in any component article. The Service provider may aggregate the information at assembly or sub-assembly level to make the information flow manageable, provided that the presence of any annex XIV- or candidate list annex XIV substance is not "hidden";
- the use of the substance (in general terms);
- risks caused by the presence of the substance during use, maintenance and/or waste disposal; where these risks are present, the appropriate risk management measures are reported in the user instruction, maintenance documentation and/or waste disposal instruction.

Name of substance	Cas-nummer	Use of substance (in general terms)	Causes a risk during			Leglislation
			Use*	Maintenance*	Waste disposal*	

* Yes or No

Attachment E List of abbreviations

AOC	Air Operator Certificate
AOR	Area Of Responsibility
AP	Autopilot
ATC	Air Traffic Control
ATP	Acceptance Test Procedure
ATPL(H)	Airline Transport Pilot License (Helicopter)
CD	Counter drugs
CDR	Critical Design Review
COI	Contact Of Interest
CPL(H)	Commercial Pilot's License (Helicopter
DCCG	Dutch Caribbean Coast Guards
DMO	Defence Materiel Organization
EASA	European Aviation and Safety Agency
EFZ	Exclusive Fishery Zone
EO	Electro Optical
EPIRB	Emergency Position Indication Radio Beacon
FAA	Federal Aviation Administration
FCL	Flight Crew Licensing
FIR	Flight Information Region
FLIR	Forward Looking Infra Red
FMS	Flight Management System
FOV	Field Of View
FV	Fishing Vessel
G/F	Go Fast
GPS	Global Positioning System
HF	High Frequency
HO	Helicopter Operator
ICAO	International Civil Aviation Organization
ICS	Internal Communication System
IMC	Instrument Meteorological Conditions
IMO	International Maritime Organization
IFR	Instrument Flight Rules
IR	Infra Red
IRDS	IR Detection System
ISA	International Standard Atmosphere
LE	Law Enforcement
LOS	Line Of sight
MAA	Military Aviation Authorities
MEEL	Mission Essential Equipment List
MPA	Maritime Patrol Aircraft
NAV	Navigation
NETD	Noise Exceeding Temperature Difference
NM	Nautical Mile
NVG	Night Vision Goggle
OAT	Outside Air Temperature
OSC	On Scene Coordinator
OT	Operational Team
PAX	Passenger (non-crew)
PC	Project Coordinator
PDR	Preliminary Design Review
PiC	Pilot in Command
PIW	Person In Water
PM	Project Manager
POD	Probability Of Detection
PoR	Programme of Requirements

RADALT	Radar altimeter
RCC	Rescue Coordination Centre
RNLN	Royal Netherlands Navy
R/T	Receive Transmit
RWC	Rotary Wing Capacity
SAR	Search And Rescue
SOLAS	Safety Of Lives At Sea
SSS	Saba-St. Maarten-St. Eustatius
SVR	System Verification Review
TOI	Target Of Interest
TR	Test Report
TP	Test Plan
TRR	Test Readiness review
TTW	Territorial Waters
UHF	Ultra High Frequency
VFR	Visual Flight Rules
VHF AM/FM	Very High Frequency Amplitude Modulation/Frequency Modulation
VMC	Visual Meteorological Conditions
WIGS	West Indies Guard Ship

Docnr 335

From: "512E 512E 512E DMO/PROJN/PR vOZB"
Sent: Thu, 11 Mar 2021 14:53:56 +0200
To: "512E 512e CZSK/P&O/P&O/FLEXSCHIL/BURFLEXCAP/INZET" <512E @mindef.nl>
Subject: gunningsmatrix en complaince matrix

Op het sharepoint

512I

In deze folder onder POR voor de helikopter zie je de compliance matrix en het gunningsmodel. De leveranciers vullen in hun aanbieding de compliance matrix in met hoe, wat, waar enz. Die gaan we bij de evaluatie bezien en beoordelen of we overtuigd zijn van datgene dat ze zeggen. Op basis van de statements in de compliance matrix waar wij het mee eens zijn vullen wij de gunningsmatrix in en daar komt een score uitrollen "fictieve aanbiedingsprijs". Degene met de laagste aanbiedingsprijs wint het contract.

Hetzelfde in de folder van fixed wing.

512E