**The Danish Defence Acquisition and Logistics Organization**

**Tender for** 4 ea. ANTENNA, HF DIPOLE 2,0 TO 30 MHZ,

NSN 5985222844569

and

4 ea.HARDWARE KIT,MECHANICAL, ANKERKIT CONCRETE ANTENNE,HF 1765-120-4K,

NSN 5340016211149

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| **Question submitted** | **Answer** | **Date of answering** |
| *Question no. 1:*Is it possible to get a documentation and specification package as availableunder NSN 5985222844569 and NSN 5340016211149 for the two items to be offered?This especially as there seems not to be any documentation publicly available for the“HARDWARE KIT,MECHANICAL, ANKERKIT CONCRETE ANTENNE,HF 1765-120-4K, NSN 5340016211149”?  | DALO cannot supply a documentation and specification package due to IPR. | 18.02.2019 |
| *Question no. 2:*1. We managed to find the attached datasheet from the internet for “1765-120-4K” andas it an uncontrolled copy, we would like you to confirm that it is for the correct product?

Please see attached for a copy.  | DALO can confirm that the 1765-120-4K in the datasheet it is the correct product | 18.02.2019 |
| 1. *Question no. ….*We assume the two items to be used together, the other being the above ground part

(antenna) and the other the below ground part (foundation it) of the assembly, we wouldlike to know the mechanical interface between these two items? Interface= where doesthe antenna start from and where does to foundation end. | It’s up to the Supplier to define the mechanical interface between the above ground and the below ground parts. The reason to split the delivery is that the below ground part has to be shipped to Greenland this summer. | 18.02.2019 |
| 1. The RF-interface is assumed to be on the balun locating between the masts app. 1,5m above

ground. The  connector at the balun feed point is 1 5/8" EIA, center pin, bolt hardware andthe O-ring between the EIA flanges is not included. | Noted. | 18.02.2019 |
| 1. It is assumed that the transmission line between the shelter and balun and it’s accessories are

not to be included in the delivery? | The transmission line between the shelter and balun is supplied by DALO. | 18.02.2019 |
| 1. For the below ground part, we would like to know the soil type and conditions as that may have an effect on the delivery content
 | The soil type and conditions is Silt. | 18.02.2019 |
| 1. For the below ground part, please list the deliverables if not yet done so under question 1).

Does the mast and antenna grounding system belong to the deliverables? | It’s up to the Supplied to make a list of the deliverables that fits his antenna and the mast and antenna grounding system for lightning protection shall be a part of the delivery. | 18.02.2019 |
| 1. Please confirm that the antenna is to be delivered without a (RF) radial ground network?
 | DALO can confirm that the antenna is to be delivered without (RF) radial ground network. | 18.02.2019 |
| 1. What are the preferred coatings on the mast and antenna structures. Hot dip galvanizing, painting etc.
 | DALO prefer Hot dip galvanizing. | 18.02.2019 |
| 1. Any safety devices needed/required as a part of the structure? If yes, list in detail.
 | No safety devices is needed as a part of the structure. | 18.02.2019 |
| 1. Since 01.07.2014 all structural steelwork and aluminum within EU fall under the Construction

Products Regulation (CPR), which means aluminum or structural steel CE marking must besecured to show compliance with EN 1090-1 (the harmonized European standard that appliesto structural metalwork). CE Marking, with respect to EN 1090-1, is a self-declaration. But inorder to produce the CE Mark Factory Production Control (FPC) needs to be assessed and certifiedby a notified body. According to this standard it is on the buyers responsibility to ensure that the companymaking the design and manufacturing has the required certificates. The item NSN 5985222844569 “1765-120-4K” contains supporting metal structures that we recognize to land under the EuropeanStandard EN 1993-3-1, Eurocode 3: Design of steel structures: Part 3.1: Towers, masts and chimneysTowers and masts. Due to that we would need to know according which national annex (NA) the designis to be made. | Greenland is not covered by the EU regulation. And as such there is no national annex for Greenland. | 18.02.2019 |
| 1. Eurocode 3 requires that the environmental conditions each site are separately studied and that a structural

analysis is done based on these conditions. In reference to question 5) regarding he national annex (NA) alldesign parameters listed in the NA are needed for each site separately or alternatively the same for thecombined so called “worst conditions”, should that be preferred. The details normally needed, but not limited to are:**a)Classification:**-Reliability class.-Design lifetime (years).-Remaining design lifetime (years).-Execution class (according to EN 1090-2):**b)Height and location:**-Height above ground level (m).-Heigth above sea level (m).-Height above surrounding environment (m).-Slope/hill height(m).-Slope/hill length (m).-Slope/hill inclination (degrees)**c) Terrain and wind:**  -Terrain classification/category.--Basic wind speed v(b)/v(ref), will only be indicated normally if higher than in national annex (m/s).-Wind speed at serviceability limit state, will only be indicated normally if higher than in national annex (m/s).-Ice class/category.-Ice density for mast frame, will only be indicated normally if differs from the value in national annex.-Ice density for mast guys, will only be indicated normally if differs from the value in national annex.-Does the structure need to be evaluated/studied mast frame side fully blocked with ice (Y/N)?**d) Others:**-Ice density for antenna wires, will only be indicated normally if differs from the value in national annex.-Any other information in reference to environmental conditions as seen applicable and relevant. | The antenna has to be placed in Coastal environment at the Headquarters of Sirius sledge patrol on Daneborg at the North-East Coast of Greenland (position 74o18’23.81”N 20o13’13.16”W).Wind Survival Rating without ice 224 km/h and with 12mm Radial Ice 80.5 km/h.The Supplied has to design his antenna to comply with the above. | 18.02.2019 |
| 1. It is assumed that the structural simulations and their results are needed after for the civil works

and foundation design? | Recommended foundation design has to be supplied. | 18.02.2019 |
| 1. Please indicate what kind of RF analysis or simulations (VSWR, gain,radiation patterns etc.) are required as

deliverables on offer and on order and on what kind of ground properties these are expected to be run on.  | Directive Gain in dB Relative to Isotropic (Azimuth and Elevation) over perfect ground and typical SWR has to be supplied. | 18.02.2019 |