

## **Weapon characteristics:**

### **ARCHER**

**Type:** Wheel based 155mm Howitzer L/52

#### **Barrel:**

Calibre: 155mm

Length: 52 calibre

Rifling: 48 Grooves, 1 twist in 22,5 calibre

Breech: Screw-type

Chamber size: 25 litre

Muzzle velocity (max chg): about 950m/s

#### **Loading device:**

Type: Push/flick rammer (last part will be free flight)

Velocity: About 6m/s

#### **Ammunition compartment:**

Temperature range:  $\div 46^{\circ}\text{C} - +71^{\circ}\text{C}$

Type of Magazine: Paternoster type (endless chain conveyer)

Capacity: 21 ea Projectiles

18 ea Charges

Projectile orientation: Vertical (Laying flat)

Max Projectile length: 100cm (incl. fuze)

Fuze Setter type: EPIAFS (integrated in the projectile magazine)

Primer: TPTR77 (DM191 type percussion primer)

Charges: DM72 Modular charge

## **Munition Requirements**

The requirements listed below are not to be seen upon as a complete requirement list. This is just a selection of some of the main requirements that are of great importance for this Request for Information.

A future Request for Proposal will contain a lot of additional requirements and some of the below listed requirements may be subject for changes.

## **General Requirements**

- The Artillery munitions shall be tested and verified according to STANAG 4224.
- The Artillery munitions shall comply with the Joint Ballistic MoU (JBMOU) and to be used without Restriction in ARCHER and all Guns L/39 and L/52 within Joint Ballistic MoU.
- The Artillery munitions (not smoke) shall have a shelf life of minimum 20 years
- The Artillery smoke munitions shall have a shelf life of minimum 10 years
- The Artillery munitions shall have Insensitive Munitions capabilities according to STANAG 4439 ed3
- The Artillery munitions shall be qualified for usage and storage in the climatic zones A1, B1 and C2 according to STANAG 4370.
- The Artillery munitions should be delivered with a detachable Base-Bleed (BB) element and have a Hollow-Base solution.

## **Range Requirements**

- The Artillery munitions shall be capable of a maximum range  $\geq 40000\text{m}$  in a L/52 tube
- The Artillery munitions shall be capable of a minimum range  $\leq 5000\text{m}$  in a L/52 tube
- The Artillery munitions should be capable of a maximum range  $\geq 50000\text{m}$  in a L/52 tube
- The Artillery munitions should be capable of a minimum range  $\leq 3500\text{m}$  in a L/52 tube

## **Dispersion Requirements**

- The Artillery munitions shall have a dispersion in range (50%),  $< 0,4\%$  of the firing range
- The Artillery munitions shall have a dispersion in deflection (50%)  $< 0,1\%$  of the firing range
- The Artillery munitions should have a dispersion in range (50%),  $< 0,3\%$  of the firing range
- The Artillery munitions should have a dispersion in deflection (50%)  $< 0,08\%$  of the firing range

### **High explosives projectile Requirements**

- The HE projectile shall be optimized for effect against soft and semi-hard targets. Priority to semi-hard targets like unarmoured and light armoured vehicles, i.e. BMP2.  
Remark: Effect shall be understood as penetration of vehicle and/or incapacitation of all attached equipment such as optical instruments, antennas, tires, etc.
- All Explosive shall be qualified according to STANAG 4170.

### **Illumination projectile Requirements**

- The illumination projectile shall illuminate a target area, radius  $\geq 500\text{m}$ , with visual, continuous light, time  $\geq 60$  sec.
- The illumination projectile should illuminate a target area, radius  $\geq 750\text{m}$ , with visual, continuous light, time  $\geq 60$  sec.
- The illumination projectile should illuminate a target area, radius  $\geq 750\text{m}$ , with visual, continuous light, time  $\geq 90$  sec.
- Target identification shall be possible at observations distances  $\leq 400\text{m}$  (within the illuminated area)

### **Smoke projectile Requirements**

- The smoke projectile shall contribute to screening and obscuring observation with modern observation equipment ( i.e. Thermal- and IR instruments)
- The smoke projectile shall produce effective smoke on the ground within 30 sec.
- The smoke projectile shall have a burn time  $\geq 120$  sec
- The smoke projectile shall be effective in targets areas with a snow depth  $\leq 50\text{cm}$
- The smoke shall be environmentally friendly (to be used without any toxicity restrictions)

### **Fuze Requirements (for high explosive projectile)**

- The fuze shall have the modes super quick, delay and proximity
- It shall be possible to set the fuze mode inductively, according to STANAG 4369
- The fuze shall allow overshooting in proximity mode.

### **Fuze Requirements (for smoke projectile)**

- Norway has the Fuze M762 ET in stock and the intension is to use this on the Smoke projectile. Please make a remark if this is not possible.

### **Fuze Requirements (for illuminating projectile)**

- Norway has the Fuze M762 ET in stock and the intension is to use this on the Illuminating projectile. Please make a remark if this is not possible.

### **Modular Charge Requirements**

- The modular charge shall have equivalent characteristics, design and functionality as modular charge DM72.

**Primer Requirements**

- The Primer cartridge shall be a DM191 type percussion primer or equivalent, for a screw-type breech.