

This Challenge is issued under the BCIP Challenge Call for Proposals (EN578-DB1700).

Please refer to the [Solicitation Documents](#).

Challenge Name: Enhancing Canada's armoured vehicles

Challenge Notice: EN578-DB1702

Priority Area: Military Component

Maximum Contract Value: \$1,000,000

Challenge Sponsor: Defence Research and Development Canada (DRDC)

Background/Summary

Transparent armour is an inherent part of many armoured vehicle fleets, be it tactical, logistic or engineering fleets. Transparent armour is the portion of a vehicle's armour system with the lowest efficiency in terms of mass per meter square, when compared to its opaque counterparts.

The purpose of this challenge is to identify and evaluate vehicular transparent armour systems (the "Innovation") for large window areas, e.g. 40 x 60 cm, that are lighter in weight, thinner, and possess increased durability when compared to current commercially available glass-based systems.

Defence Research and Development Canada (DRDC) is Canada's leader in defence and security science and technology. DRDC provides Canada's military and national security groups with the knowledge and technological advantage to defend and protect Canada's interests at home and abroad.

Challenge Details

The aim of this challenge is to test the performance of the Innovation.

Note: The following elements of the challenge will be assessed in accordance with the Proposal Submission Form and the Evaluation Grid.

The Innovation should possess as many of the following characteristics:

- Offer 4-shot multi-hit resistance against armour piercing and artillery threat level as specified in NATO STANAG 4569 AEP-55 Volume 1 (kinetic energy and artillery):
 - 2 below 60 kg/m², or
 - 3 below 100 kg/m² or
 - 4-partial at 170 kg/m²-using the alternative multi-hit procedure for transparent armour-3-shot 120 mm triangle (using a tolerance between 0 and 5 mm) or
 - 4 below 200 kg/m²
- Includes improved anti-spall layer, internal layers and integration system addressing the sensitivity of some transparent armour components to environmental, or age related degradation.
- Mosaic (or segmented) strike faced systems will be considered if they offer a weight versus multi-hit advantage over monolithic strike faced systems.

- Anticipated high volume cost would be 5 000 \$/m² or less.

The Innovation must possess all the following characteristics:

- Offer 4-shot multi-hit resistance against armour piercing and artillery threat level as specified in NATO STANAG 4569 AEP-55 Volume 1 (kinetic energy and artillery):
 - 2 below 100 kg/m², (using a tolerance between 0 and 5 mm) or
 - 3 below 150 kg/m², (using a tolerance between 0 and 5 mm) or
 - 4-partial at 220 kg/m²-using the alternative multi-hit procedure for transparent armour-3-shot 120 mm triangle (using a tolerance between 0 and 5 mm) or
 - 4 below 270 kg/m², (using a tolerance between 0 and 10 mm)
- Offer the same level of protection over a range in temperature of -43°C to +65°C
- Optical qualities: Haze, optical deviation and optical distortion as well as luminous transmittance in visible and infrared domains (380 to 930 nm range) at the same levels or better than current commercial glass-based systems with the same protection levels.

Innovation that possesses the following characteristics will not be considered:

- Anticipated high volume cost would be more than 15 000\$/m² for the same life-cycle as current systems.

Proposal

Bidders must provide technical details of the Innovation and how it meets the above targets in their proposal. The proposal submission form can be found on the [Challenge Notice](#).