

## **Innovative Solutions Canada Program**

### **Challenge EN578-170003/02: 3D Printing and Additive Manufacturing: Metal Powder Bed Density Test Equipment**

#### **Amendment 002**

This amendment is raised to answer bidder questions.

#### **Question #2**

In the Versatility section, the different powder deposition mechanisms are discussed. Does the testing equipment have to include all of these modules? If so, is it possible to have more details on the oscillating blade?

#### **Response #2**

Ideally, the equipment should be modular in design. The recoater must be able to be changed easily and quickly so that its impact on the powder bed can be studied. Only one recoater is expected to be used at a time.

We do not have any details about the oscillating blade at this time. It is more of a small amplitude vibration that fosters the powder flowability. In general, the idea is to be able to simulate the behaviour of recoaters available in 3D printers on the market. Information collection will probably be necessary in the first phase of the project. Certain machines use fixed stiff blades, while others use flexible blades and others use a roller that turns. The recoaters should be seen as accessories that can be made available as the device is developed. However, a contingency must be planned with respect to the available volume of the device so that different recoaters can be installed.

#### **Question #3**

The anticipated results of the challenge are well defined overall, but we are not sure we understand what must be completed for Phase 1. Is a CAD-based design sufficient or can we produce a prototype to validate the technical feasibility of the systems that are most critical based on our knowledge or even produce a complete prototype?

#### **Response #3**

Phase 1 is for the development and delivery of a proof of concept addressing a challenge articulated by a federal department or agency. The proof of concept will have to demonstrate the scientific and technical feasibility, and commercial potential, of a novel solution that addresses a federal department's challenge. Prototype development is not included under Phase 1. Small businesses that successfully complete Phase 1 may receive a contract to develop their solution beyond the proof of concept with the goal of developing and delivering of a prototype addressing a federal department's challenge.