

Direct to Phase II Topic, DON26BZ02-DV053

The following clarifications are provided by the Technical Points of Contact for topic DON26BZ02-DV053 to avoid unnecessary cost associated with execution of the topic requirements without changing topic objectives or inhibiting innovation.

1. Dewar-Cooler Assembly

The Topic currently states:

“The focal plane array should be installed in an integrated Dewar-Cooler assembly operating at 100-160 Kelvin, with cold shield and optics of $f1.5$ or faster with a 1-5 micron optical transmission band.”

Clarification:

For the purposes of this effort, the “integrated Cooler-Dewar assembly” is understood to include cryo-cooled Dewars and liquid-nitrogen cooled (pour-fill) Dewars (or equivalent) that provide at least four hours continuous and stable operation at 100-160 Kelvin. Also, an optical transmission band of 1.4 - 4.9 microns is considered acceptable in meeting the stated “1-5 micron optical transmission band”, which was intended to be a nominal statement of the operating band of interest. The requirement for inclusion of a cold shield and optics of $f1.5$ or faster is unchanged.

2. Prototype FPA Size and Pixel Pitch

The Topic currently states:

“For purposes of demonstration, the prototype FPA is only required to have 2000 x 2000 (or equivalent) pixel format, but no larger than 8-micron pixel pitch.”

Clarification:

For purposes of demonstration, an FPA with a nominal 1000 x 1000 pixel format is acceptable provided that the FPA is at least 1000 pixels in width along the horizontal axis. This is intended to allow for the use of more standard size (non-custom) read-out integrated circuits while retaining the performance requirements demanded by a large format FPA. For example, a more standard 1280 x 720 pixel format would be acceptable. The requirement that pixel pitch be no larger than 8 microns is unchanged.

3. DROIC/DPROIC Size and Pixel Pitch

The Topic currently states:

“The DROIC/DPROIC will maintain a pixel pitch of 8 microns or less, have a minimum size of 4 megapixels, and be capable of scaling (and/or tiling) to larger formats.”

Clarification:

Consistent with Item 2, above, the minimum size of the DROIC/DPROIC is relaxed to 1 megapixels (nominal). The requirements for maximum pixel pitch of 8 microns and compatibility with scaling (and/or tiling) to larger formats is unchanged.

4. Camera Package, Optics, IR Transmission, and Instantaneous FOV

The Topic currently states:

“The camera must be packaged in a fully integrated Dewar cooler assembly capable of stable operation anywhere from 100-160 Kelvin and equipped with optics having 1.5 or faster f-number with uniform IR transmission from 1-5 microns and 200 micro-radian instantaneous FOV (or less).”

Clarification:

Consistent with Item 1, above, a band of 1.4-4.9 microns is acceptable in meeting the requirement for uniform IR transmission. The “integrated Dewar cooler assembly” is also clarified in Item 1. The requirements for 1.5 or faster f-number optics and the 200 micro-radian (or less) instantaneous FOV are unchanged.

5. Data Interface

The Topic currently states:

“The Navy desires an innovative camera technology capable of providing dual-band e-SWIR and MWIR video imagery data in separate channels via a Camera Link serial protocol standard (or equivalent) interface.”

Clarification:

A GigE interface is understood to be an equivalent data interface and is acceptable. This clarification is specifically provided because GigE is typically lower cost, while still being compatible with existing Naval Research Laboratory test equipment. In addition, time division multiplexing utilizing a single physical output is an acceptable means in meeting the requirement that the imagery data be provided in “separate channels”.

6. Prototype Camera Interface

The Topic currently states:

“The camera must include a Camera Link or equivalent data interface.”

Clarification:

Consistent with Item 5, above, a GigE interface is understood to be an equivalent data interface and is acceptable. This clarification is specifically provided because GigE is typically lower cost, while still being compatible with existing Naval Research Laboratory test equipment.

7. Delivered Prototype

The Topic currently states:

“Deliver, to the Naval Research Laboratory, the prototype camera in a ready-to-use configuration and condition with user instructions and interface descriptions provided, including Camera Link (or equivalent) data output format with protocols defined and documented.”

Clarification:

Consistent with Item 5, above, a GigE interface is understood to be an equivalent data interface and is acceptable. This clarification is specifically provided because GigE is typically lower cost, while still being compatible with existing Naval Research Laboratory test equipment.