

Attachment 0003

National Imperative for Industrial Skills Initiative: Background and Acquisition Operational Concept

1. Background.

1.1. The U.S. finds itself in a new era of great power competition that could drive potentially large surge and sustained defense production needs. The U.S. defense industrial base and its workforce must meet increasingly complex and technically demanding industrial output requirements at high response speeds, and amidst highly globalized and competitive supply chains within which our adversaries are applying subversive economic tradecraft. Further compounding the issue, the Department of Defense (DoD) and many of its suppliers find themselves enmeshed in broad and fierce domestic competition for industrial talent to meet critical production needs. Studies project a requirement for nearly 3-1/2 million U.S. manufacturing workers over the next decade, but skills gaps will result in over 2 million of those jobs going unfilled.¹

1.2. The interagency task force study responding to Presidential Executive Order 13806 also reported significant workforce problems affecting every defense manufacturing sector. Specific workforce skill shortages affecting the DoD include, but are not limited to: additive manufacturing; composites specialties; CNC machining (metals, composites and optical materials); digital manufacturing skills and process knowledge (e.g., use of CAD/CAM, digital ERP and PLM systems, including production planning/operations/work instruction systems, production/machine controls and cybersecurity for industrial control systems, etc.) and other Industry 4.0 applications; metrology; microelectronics; precision optics; quality assurance / quality control (including non-destructive testing); shipbuilding skills (ship and pipe fitting, metal forming, specialty welding, etc.); and welding / joining, especially for specialty materials.

1.3. Current approaches to this issue have led to one-off and less-than-optimal national/enterprise solutions addressing industrial skills shortfalls and related problems. U.S. programmatic responses to-date have largely focused on STEM efforts and engineering workforce pipelines within the nation's educational system. However, the 'mass' of current and projected industrial workforce shortfalls lies in skilled industrial trades. Hiring and sustaining trade skill workers require significantly more effort than many service sector jobs. Moreover, manufacturing supply chains are often complex and dynamic/changing, transcending state and regional boundaries, yet the geographic mobility of the industrial workforce is relatively low, creating additional requirements for adaptive, location-sensitive workforce development pipelines.

1.4. The workforce issues described above are amplified in the U.S. defense manufacturing subset of the national industrial enterprise. To meet emerging defense needs, U.S. defense manufacturers are often required to produce highly complex

¹ 2018 *Deloitte and The Manufacturing Institute skills gap and future of work study*, page 3. Deloitte Development LLC.

products and systems on unforgiving timelines in challenging quantities, product mixes and scales. The availability of highly skilled industrial workers and associated production capacities to meet these requirements is further undermined by uneven and disruptive product/system acquisition cycles and inconsistent federal funding. Lastly, the economic tradecraft and other practices of competitor nations can lead to continued offshoring of labor/production capacity, as well as disincentives to sustain domestic educational and training pipelines supporting highly skilled manufacturing workers, all of which can significantly degrade U.S. defense production capabilities. This degradation equates to delays in acquisition programs and operational missions as well as high or unsustainable maintenance costs for deployed technologies across the DoD.

1.5. The IBAS program office has concluded that localized or uncoordinated, one-off approaches and attempts to close national industrial skills gaps have not and will not achieve the velocity and scale required to meet the strategic needs of the DoD and the nation. Moreover, the office has concluded that DoD—the largest acquirer of manufactured products and systems in the federal government—is well positioned to function as a governmental catalyst to establish momentum and drive coordinated, multi-level efforts across the nation’s industrial ecosystem to close workforce gaps and expand national production capacity and resiliency.

1.6. In response to these issues and conclusions, the IBAS program office has developed an initiative entitled the “National Imperative for Industrial Skills.” The initiative’s objective is to rapidly catalyze an effective national public-private response that builds out a robust national ‘industrial skills workforce development ecosystem’ to: a) close existing industrial workforce skill gaps, with a particular (but not sole) focus on the skilled manufacturing trades on which the DoD relies, and b) leverage these gap-closing efforts to help create the conditions for sustained, multi-sector growth of national production capacities and improved industrial resiliency. The operational and aspirational goals of the initiative are to:

- *promote prestige* of manufacturing and related careers and *inspire* the next generation of industrial skills professionals;
- *accelerate* workers into and through training/development pipelines, at appropriate *scale* and *velocity*; and
- *elevate* U.S. manufacturing to world-leading status.

1.7. Industrial Skills Workforce Development Ecosystem Model. The IBAS program office developed a common operating model, the “Industrial Skills Workforce Development Ecosystem Model” (see Figure 1), to underpin the initiative and to help guide a multi-level, integrated approach. The model represents a common touch point for stakeholders at all levels to enable more robust dialogue, convergence of thought, and increased unity of effort across a broad spectrum of local, state, regional and national industrial workforce development activity.



Industrial Skills Workforce Development Ecosystem Model

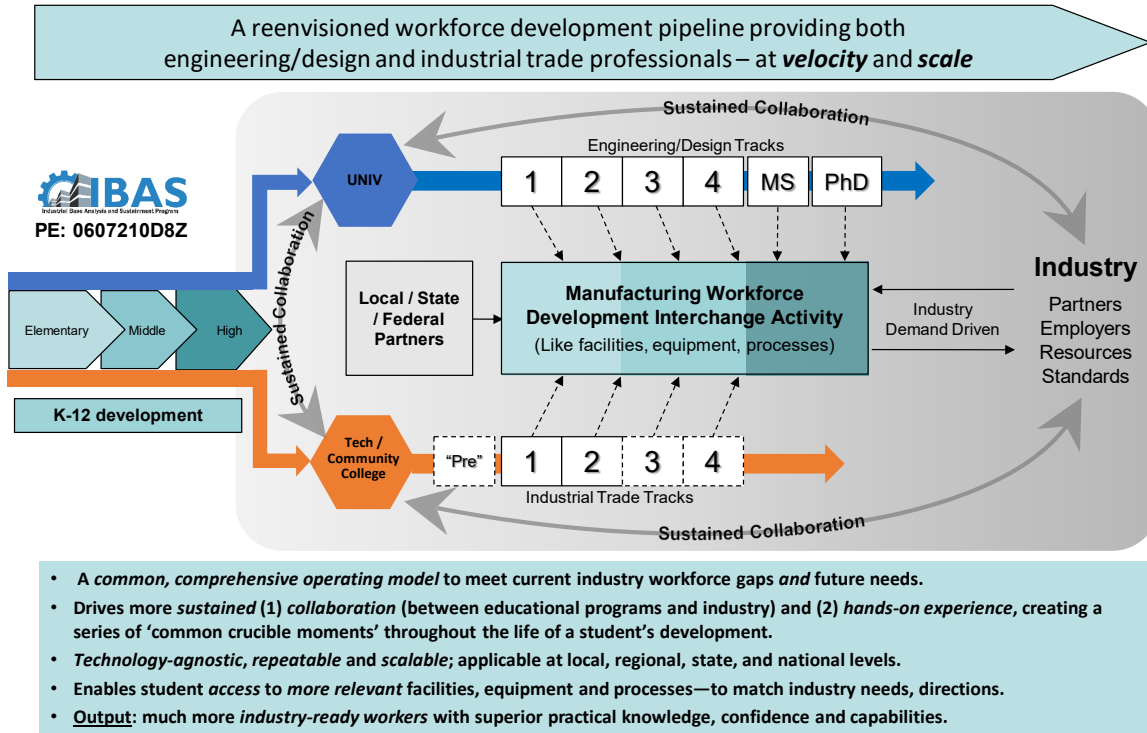


Figure 1: Industrial Skills Workforce Development Ecosystem Model

1.8. Principles of the model. The model embodies several key, largely interrelated principles deemed essential for success, specifically:

1.8.1. Active, substantive *involvement of all key stakeholders* in the U.S. industrial workforce development ecosystem, at all levels (local, state/regional, federal/national).

1.8.2. The exercise of well-designed, flexible and vibrant *public-private partnerships* that meaningfully balance governmental and non-governmental roles and responsibilities, address each partner's key equities, and provide for joint leveraging of economic resources and infrastructure.

1.8.3. Common access to, or shared use of, *like facilities, equipment and processes*, all of which are *tied to progressive and relevant industry needs*, leading to much more dynamic educational interaction and creating motivating 'common crucible moments' and hands-on experiences oriented toward meeting valid industrial needs.

1.8.4. Greater *focus on the interfaces and relationships* between the entities and functions depicted (or implied) in the model, versus on the entities themselves—for example, the interfaces and relationships:

- between various educational tracks/paths (e.g., between K-12, 2-year, 4-year and post-graduate tracks);
- between one or more of the above educational tracks and industry (e.g., small and medium manufacturers, large OEMs, industry associations, etc.);
- between any of the above entities and non-profit/governmental economic support or development activities; or
- between the various levels, or 'layers' of the model—for example, between local workforce development activities, communities or centers and state/regional levels or the national level.

1.8.5. *Leveraging*, where practical, *existing* organizations, alliances, infrastructure and processes in order to minimize resource-intensive start-up (e.g., 'greenfield') activity (but never at the expense of, or the need to create, innovative and flexible new designs and entities).

1.8.6. *Primacy of local workforce development/hiring activity and needs*. While this initiative addresses important improvements in regional and national level structures, interfaces and capabilities, it recognizes that communities/clusters and workforce development centers and companies at the local level are where the essential industrial workforce development production and hiring by industry mostly take place—and each locale has unique attributes, characteristics and needs to establish or maintain health, vibrancy and growth of its local ecosystem. As such, the unique needs, characteristics and dynamics of each locally defined industrial workforce development and hiring ecosystem and stakeholder base must receive priority consideration. Doing so will help underpin the broader health and growth of state/regional ecosystems and a broad, national ecosystem.

1.8.7. Perhaps most importantly, the need for sustained, substantive and committed *leadership* and *collaboration* at all levels to maintain positive trajectories and drive real change where needed.

1.9. Additionally, the adoption of modern and evolving industrial capabilities and trends drives the need for greater integration (if not 'blending' in some cases) between traditional 2-year and 4-year industrial educational tracks, and deeper/stronger interconnections between education pipelines and industry. Similarly, the model recognizes that industrial education can be viewed less as a sequential process of relatively isolated tracks with stepwise activities, and more as a set of rich functional and organizational relationships that place less priority on order of flow and more priority on driving industry more deeply into educational activities and vice versa. The model also recognizes that transferrable knowledge and intelligence 'modules' can be

increasingly and more flexibly leveraged at new and different points in a student's and worker's development and career. Leveraging these trends and holistically applying the above principles will yield more innovative and creative curricula and credentialing program development, new apprenticeship and intern programs that better target both local and strategic industrial needs, as well as new and different forms of capital investment in both educational and actual manufacturing production infrastructure and equipment.

1.10. Finally, this model and its various components are applicable at—and must be built-out across—all levels of the industrial ecosystem, including local, state, regional (intra-state and inter-state) and national levels. While tailored solutions to meet localized workforce pipeline needs will always be necessary and encouraged, more meaningfully federating, integrating and harmonizing those solutions and capabilities at state/regional and national levels is expected to yield a more powerful industrial educational 'system-of-systems' that better meets all U.S. stakeholder needs. This suggests that the graphic in Figure 1 is an (unavoidably) imperfect simplification of a much broader and multi-layered framework on which this initiative relies. In systems engineering parlance, as this complex system-of systems builds-out across the framework over time, and as functional interfaces and relationships strengthen at each of its levels, emerging 'reinforcing causal loops' will underpin educational pipeline capacity growth and greater labor supply elasticity and begin to drive self-sustaining behaviors for long-term strategic benefit to the nation and the DoD.

2. Acquisition Operational Concept. The Government is issuing this single, overarching Cornerstone Initiative Request (CIR) supporting the National Imperative for Industrial Skills initiative. The overarching CIR will serve as a standing, multi-year mechanism to solicit proposals for multiple projects intended to improve the nation's capacity to produce and deliver workers with industrial skills to meet defense needs. The CIR will remain open for a period of up to 5 years from the date it is approved for release, and it will be periodically assessed for effectiveness and focus. The Government intends to evaluate whitepapers and subsequent invited full proposals no less frequently than quarterly. Additionally, the Government expects to issue specific project calls (subordinate to the overarching CIR) when needed to meet specific/tailored requirements or needs not addressed by submissions received. The overarching CIR and any tailored project calls will include specific instructions concerning response deadlines, supplemental page limit and formatting instructions, and evaluation processes and criteria, as needed. Over time the Government will modify the overarching CIR as required, and will close it if needed.

2.1. Projects will be awarded to and performed by IRS-designated corporate entities (whether non-profit, not-for-profit or for-profit) that are members of the Cornerstone consortium. All members of teams or joint ventures that are awarded projects under this solicitation must be members of the Cornerstone consortium unless otherwise approved by the Government. The resulting portfolio of OTA projects will iteratively test/validate and refine various elements or segments of the Industrial Skills Workforce Development Ecosystem Model. The Government's intent is to produce increasing levels of model maturity, harmonization/integration and effectiveness at all

levels across the industrial skills workforce development ecosystem. While the overarching Cornerstone Initiative Request (CIR) supporting this initiative is planned for release to all Cornerstone members, the long-term objective is to establish a robust and persistent collaborative community aligned with Cornerstone Sector 16 (Industrial Base and Manufacturing Skills), to include: academia (broadly, across all levels, disciplines and activities), industry (including small businesses and non-traditional defense contractors), governmental and quasi-governmental activities at local, state and federal levels) including economic development activities, federally funded research and development centers (FFRDCs) and other research laboratories and centers, and public-private partnerships created from among the above entities. The IBAS program office believes that activating and maintaining this sector-focused community will result in better informed, better targeted and more executable submissions/proposals by Offerors against the urgent needs the National Imperative for Industrial Skills initiative is designed to address. A more detailed description of the acquisition operational concept follows.

2.2. Beginning this fiscal year under the direction of the IBAS program office in ODASD(IndPol), with program management support from the DEVCOM CBC IBAS / Cornerstone program management team, ACC-RI has issued this overarching Cornerstone Initiative Request (CIR) solicitation in support of the National Imperative for Industrial Skills initiative. This CIR provides for the establishment of multiple, unique OTA project awards supporting the initiative. The Government will also issue special, subordinate project calls if needed. The project calls will be tailored to meet specific needs not addressed by the responses to the overarching CIR. Federal Government funding committed to each project/agreement award under this CIR and associated project calls will be sourced from either PE 0607210D8Z (IBAS Program) or funds provided by other federal partners or both.

2.3. The National Imperative for Industrial Skills initiative and its supporting project calls will follow a progressive, building block approach based on the initiative's progress against requirements, lessons learned, and the overall maturation of the industrial skills workforce development ecosystem in that fiscal year. Figure 2 presents a notional depiction of the iterative, spiral development of multi-year projects comprising the initiative, with the development of follow-on project calls and resourcing based on results and lessons learned from each preceding 'solicit-award-execute-evaluate' cycle. Since IBAS funds are appropriated annually and do not include multi-year congressional appropriation commitments, any negotiated project option year periods of performance that require post-budget-year funding will be established initially without any expressed or implied commitment by the Government to exercise the option(s) and provide the associated post-budget-year funding.

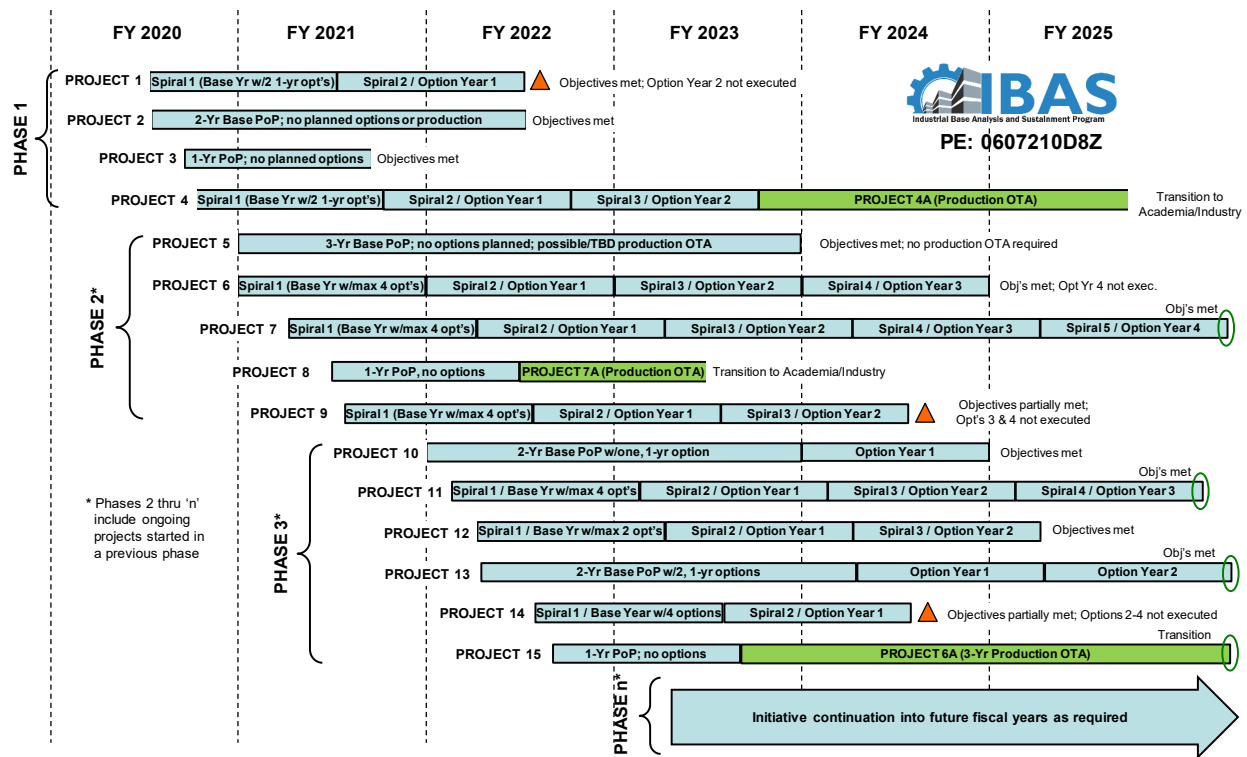


Figure 2: Notional Multi-Project, Multi-Year Flow Supporting the National Imperative for Industrial Skills Initiative

2.4. The overarching CIR and any subsequent project calls will normally use a two-step solicitation process whereby Offerors submit whitepapers of prescribed format/length outlining a proposed project intended to advance progress toward one or more objectives in the SOO (see Attachment 0001). Each whitepaper shall summarize the proposed project's objectives, technical approach, timelines, milestones, general cost share arrangements/targets, and performance metrics. The Offeror shall also recommend to the Government the OT agreement structure that the Offeror believes is best suited to accomplish the proposed technical approach; for example, whether or not the OT project agreement with the Government should entail a base period of performance (PoP) only, and what that length of time should be; or a base PoP plus any additional recommended option periods (including how many and for how long) along with justification, or some other configuration(s). The deadline for whitepaper submission is 21 calendar days after release of this overarching CIR, which is March 11, 2020, with a cyclic evaluation process instituted thereafter based on volume of subsequent submissions. Whitepaper submission deadlines normally will be 21 calendar days after the release of any special project call.

2.5. The Government will evaluate submitted whitepapers against the evaluation criteria described in Section III of this CIR. Each whitepaper evaluation has four potential outcomes: The Government may 1) request one or more Offerors enter directly into negotiations; 2) invite selected whitepaper Offerors to develop and submit full proposals; 3) request one or more Offerors re-submit whitepapers containing specific

changes; 4) not issue any invitations. If one or more Offerors is invited to submit a full proposal, the Government will provide any necessary additional or tailored proposal submission instructions and evaluation criteria for each invited Offeror (beyond the blanket submission instructions and evaluation criteria in the overarching CIR) and a deadline for full proposal submission (typically 21 calendar days). If used, the additional, tailored submission instructions for each Offeror will explain whether or not the Offeror's full proposal will be: a) evaluated competitively along with other full proposals, as well as whether single or multiple project awards are anticipated, or b) evaluated as a single proposal against tailored evaluation criteria for a single project award based on the unique nature of the proposed tasks and the needs of Government. Instructions in the invitation may also include Government suggestions with respect to teaming arrangements that may be advantageous to the Government. The Government's invitation will also transmit its decision regarding the OT base PoP length, whether or not any option periods will be considered and should be priced, and any other pertinent, agreement-related details.

2.6. Understanding the SOO Technical Objectives to Propose Against. The SOO (Attachment 0001) presents two major technical objectives: (1) Create or Improve Education/Training Centers, or (2) Improve Education/Training Functional Activity. As explained in Attachment 0001 (Statement of Objectives), **Offerors may address one or both of these two major technical objectives.** Additionally, when addressing the second objective—i.e., Improve Education/Training Functional Activity—Offerors may address one or more of the functional activities described in the subparagraphs under paragraph 2.6.2 below. In all cases, the Government will award projects based on a best value assessment of the Offeror's proposal (within available funding resources) using applicable evaluation criteria in Section III of this CIR. The following subparagraphs provide additional details supporting both major technical objectives.

2.6.1. Create or Improve Education/Training Centers. In this context, a 'center' is defined as a location-based activity with the purpose of providing industrial education or training and issuing associated degrees, credentials or certificates. A center can be a single facility, a campus or facility cluster, or set of distributed physical or virtual facilities or activities and organizations. A center might be focused on one educational level (e.g., post-secondary schooling), or more vertically, encompassing one or more levels (e.g., secondary schooling plus post-secondary community college education and training). Finally, multiple related centers (related organizationally or in some other way) may be associated with a proposed project. Submissions against this objective will seek to either create new capacity or improve existing capacity at one or more centers or groups of centers.

2.6.2. Improve Education/Training Functional Activity. In this context, 'functional activity' is comprised of the things centers do to acquire and educate or train students as well as the things the functions do in support of those same workforce development ends. Functional activities are 'center-agnostic'; they can benefit or be broadly applied to generic or notional centers or other elements or segments of the national industrial skills workforce development ecosystem. Even if the functional activity is currently associated only with one specific education/training center or group

of centers, the goal of a proposed ‘functional activity’ project is to improve *what* gets done rather than *where* (or in which center) it gets done, often with an eye toward scale-up, wider adoption, and broader ecosystem benefits. In general, functional activity projects will focus on designing, modeling, prototyping, refining, advancing or applying one or more of the following example functional activities at local, state/regional or national levels (benchmarking and deployment/scaling opportunities to better integrate best practice functional activity across the national ecosystem would also be common themes):

2.6.2.1. Marketing and/or recruiting mechanisms or campaigns focused on raising awareness of the benefits of manufacturing and careers in the associated industrial skills and helping to channel increased numbers and percentages of prospective workers into associated manufacturing sectors and careers. This can include broad national advertising campaigns, or regionally or locally focused efforts, or more functionally or academically specific and targeted engagement programs such as K-12 in-school and after-school programs and activities, maker space programs and activities, mentor and guest speaker programs, educational fairs, etc.

2.6.2.2. Industrial or manufacturing skills challenges and competition programs supported by collaborative public-private partnerships of companies, academic institutions and government organizations, with the objective to help inspire students, hone skills, drive greater awareness of career opportunities in manufacturing and industrial skills, identify facility, equipment, process and system shortfalls, enhance collaboration and interaction, and help catalyze the build-out of the industrial skills workforce development ecosystem in other ways. For example, skills competitions and challenges can help locales and states/regions identify training throughput, curriculum and equipment/facility shortfalls. Competitions can be rigorous, creative and can address various skill levels (e.g., K-12 students, post-secondary students, practicing industrial professionals, etc.) as well as various technologies (both mature and emerging technologies) and industrial market sectors.

2.6.2.3. Improvements to labor/skills competency models and skills credentialing functions and programs. Both governmental and non-governmental labor/skill competency models and credentialing standards exist, and proposed improvement projects and analyses could identify and assess various models for refinement, benchmarking and broader adoption. They could also produce tailored models to better meet unique or certain ‘boutique’ needs of industry and government.

2.6.2.4. Curriculum/curricula development, refinement and standardization (the latter where appropriate). Projects in this area may produce greater national and regional/local collaboration focused on curricula development and standards (for skills tied to both new/emerging as well as existing, mature industrial technologies and market sectors), which will benefit industry and can better accommodate increasingly mobile student populations.

2.6.2.5. Apprenticeship and internship models and programs. Apprenticeships and internships have proven to be powerful leveraging tools benefitting

students, educational institutions and employers. Program architectures and funding structures can be highly tailorable to meet local, regional or employer needs. Presidential Executive Order 13801, Expanding Apprenticeships in America, provides current administration guidance.

2.6.2.6. Upskilling, re-skilling and career transition models and programs. A key, scalable and rapidly available source of talent to fill industrial skills workforce requirements lies in existing workforce populations that are, or can be, motivated to pursue new or transitional career opportunities. Many such workers can bring strong value to industrial employers because of their established foundational skills and maturity levels.

2.6.2.7. Train-the-trainer models and programs. This could involve, but is not limited to, the study or development of more efficient, effective or robust instructor training and trainer deployment systems and centers. This activity can be a high-leverage ‘force multiplier’ that serves to more rapidly deploy knowledge and training capacity.

2.6.2.8. Economic development activities, models and programs that better match industrial educational/training systems and centers with access to capital (and help reduce financial barriers in general) and which can be deployed and scaled for greater regional or national benefit. This could also involve the study and coordination of tax and other economic policies that relate to workforce development.

2.6.2.9. Studies and analyses, with recommendations, regarding the establishment or refinement of public-private governance models that best support a sustainable and growing U.S. industrial skills workforce development ecosystem. This includes assessing new governance architectures to better connect local/regional industrial skills education and training activities. Striking the right balance between a) governmental roles/responsibilities (including agency relationships), assistance / incentives and policy/regulatory frameworks (at all levels) and b) non-governmental and commercial/industrial participation and activities, is a complex federated model design challenge for the federal government and the nation. Offerors will be encouraged to propose studies and models that help to establish effective architectures and implementation or refinement plans.

2.6.2.10. Other functions or activities proposed by the Offeror in support of the Government’s interest in catalyzing the rapid development and long-term maturation of the industrial skills workforce development ecosystem. The Government encourages the submission (by partner federal agencies, industry, academia, state and local governments or other sources) of creative, innovative and impactful proposed solutions to industrial skills workforce development problems and needs.

2.6.3. Functional interfaces and build-out points in the Industrial Skills Workforce Development Ecosystem Model. When addressing either major technical objective of this CIR (see Attachment 0001), Offerors are encouraged to pay close attention to the functional interfaces and build-out points in the Industrial Skills

Workforce Development Ecosystem Model. Figure 3 shows several functional interfaces and build-out points that the IBAS program office considers key. Creating, enabling and enhancing these interface and build-out points through prototyping activity represents

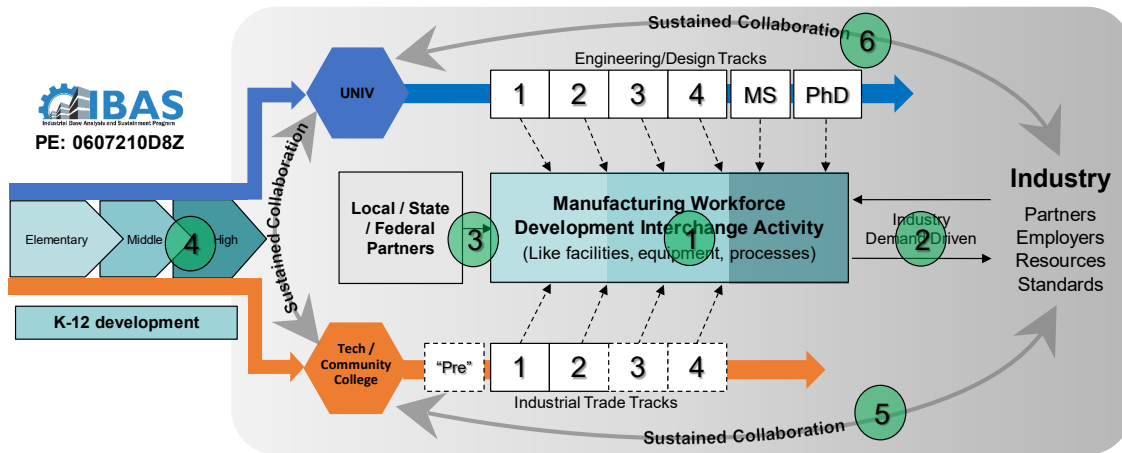


Figure 3: Key Interfaces and Build-out Points in the Industrial Skills Workforce Development Ecosystem Model

key tasks for the Cornerstone project performers supporting this initiative. The next seven subparagraphs briefly discuss these interface and build-out points.

2.6.3.1. Point 1: Manufacturing workforce development interchange activity. This is the heart of the model, the critically important nexus representing more meaningful, industry-relevant collaborative opportunity and activity among students in all educational/training tracks (including K-12, which is not as evident in the graphic). These relationships center on like, shared or common industrial equipment, curricula and facilities used in the education and training process and includes a heavy focus on the working relationships between community colleges/vocational schools and universities (with industry-driven relevancy being a pervasive theme). This interchange activity helps preclude non-relevant, isolated or 'stovepiped' educational and training experiences and can be manifested in multiple ways, including through shared or common use of facilities, equipment and processes. There is no single best approach or solution for doing this, and project performers will be encouraged to design and test configurations best suited to local/regional area technical and market sector needs/processes and available resources and infrastructure.

2.6.3.2. Point 2: Stronger industry interfaces with educational and training tracks/pipelines. This emphasizes the importance of fully integrating industry needs and resources into all industrial education and training, particularly interchange activity whereby industry-relevant facilities, equipment and processes are made increasingly available to students and workforce development activities. Industrial partners (both companies and associations representing them), who are the primary beneficiaries of the model's output that hire/employ graduating students and establish

new operating practices, technologies and standards, must be encouraged to deeply engage and contribute to healthy operation and sustainment of this model at all levels—local, state/regional and national.

2.6.3.3. Point 3: Participation/involvement of local, state and federal governmental (and quasi-governmental) partners. The roles and responsibilities governmental bodies and functions play in industrial education is a critically important variable in the model that requires robust exercise and testing as part of this initiative. The primary focus shown in the diagram is the interface between governmental organizations and the central manufacturing workforce development interchange activity, where funding (including grants) for facilities, equipment, curriculum development, internship/apprenticeship programs, and R&D activities can be highly impactful. However, active and balanced governmental and quasi-governmental participation, sponsorship and other involvement can take other impactful forms across the model (e.g., in national marketing campaigns, industrial skills competitions, local and regional economic development campaigns, etc.).

2.6.3.4. Point 4: K thru 12 educational program development. More diverse and technologically challenging post-secondary school industrial education and training requirements demand parallel improvements in K thru 12 preparatory programs and activities. Just as important, many students begin to develop (and in many cases solidify) their life-long career path orientations well before entering high school. As such, students should be meaningfully exposed to opportunities in industrial skillsets not later than middle school—preferably earlier. This will also help overcome broad U.S. societal (and parental) messaging that success and happiness in a career can only be achieved through 4-year (or higher) degreed professions. Proposals that help to address these issues are encouraged.

2.6.3.5. Point 5: Collaborative activity between industry and technical/community college programs. This interface represents the fundamental relationship and functional activities between the industrial customer/employer and the primary provider of its production workforce. Offerors are asked to explore all aspects of this relationship to ensure that customer demand signals are fully recognized and processed by the educational force provider, that industry partners are making sound, data-driven strategic investments in educational capabilities and community infrastructure, and that collaborative/working relationships are examined with Industry 4.0 and other new/emergent technologies and trends in mind.

2.6.3.6. Point 6: Collaborative activity between industry and four-year university and higher education programs. Much like Point 5, this interface, too, represents a key relationship between the industrial customer/employer and, in this case, the provider of its scientific, engineering and design workforce supporting manufacturing and production activities. Perennial barriers to maximizing production capability and improving product quality and affordability can be traced to the scientific, engineering and design workforce not sufficiently understanding and assessing manufacturing risks early enough in the product development cycle. The Government encourages the creation and prototyping of innovative changes to four-year, graduate

and post-graduate industrial education and training and immersion activities that help drive manufacturing and production considerations and risk assessments earlier in product/system design and engineering activities.

2.6.3.7. Other interface and build-out points. While Figure 3 identifies the six key interface and build-out points in the model discussed above, many other points are worthy of design exploration and testing. Offerors are encouraged to study, test and refine other areas (or combinations of areas) of the model, based on their expertise and the prospective value of such work to the DoD. An example of a multi-point prototyping study would be combining the previously suggested studies with development of public-private federated governance models that best underpin and enable a healthy and growing U.S. industrial skills workforce development ecosystem.