

BROADBAND DEPLOYMENT ADVISORY COMMITTEE (BDAC)

**Broadband Infrastructure Deployment Job Skills and
Training Opportunities – Working Group**

3/27/20

Working Group Members

* Main BDAC Members

1. Leticia Latino* (Chair)
2. Rikin Thakker* (Vice Chair)
3. Nayef Abu-Ageel
4. Miranda Allen
5. Earl Buford
6. Kelleigh Cole*
7. Todd Crump
8. Robert Debroux* (Alt. Tim Ulrich)
9. Douglas Dimitroff*
10. Bill Esbeck
11. Zane Farr
12. Michael Hain*
13. Kyle Hitchcock
14. Donald Knife
15. Eve Lewis*
16. Charles McKee*
17. Marquita Rockamore (Alt. Tondi Allen)
18. Grant Seiffert
19. Steve Sellenriek
20. Dileep Srihari*
21. Brent Skorup*
22. Curt Stamp*
23. Tom Struble*
24. Larry Thompson* (Alt. Julie Darrington)
25. Jenifer Vanek

Opening Remarks

- **Chair: Leticia Latino van Splunteren**

CEO, Neptuno USA Corp

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- **Co-Chair: Rikin Thakker**

VP of Telecommunications and Spectrum Policy, MMTTC

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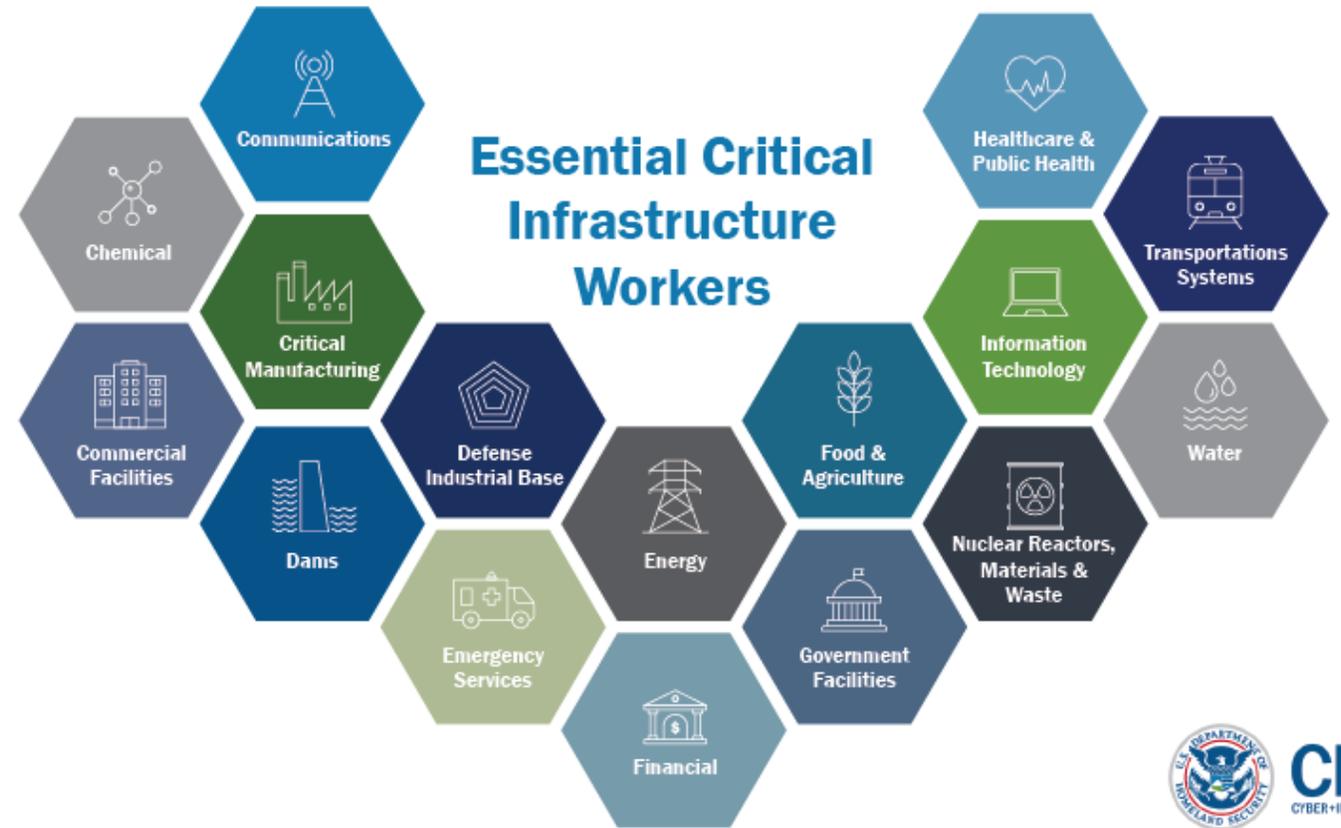
We want to cover today

- **Opening Remarks by Chair and Co-Chair**
- **This quarter at-a-glance**
- **Main Takeaways from SMEs**
- **Navigating Department of Labor Job Codes**
- **Training Programs Discovery and Evaluation**
- **Other relevant discussion points**
- **Next quarter focus**
- **Open floor for comments and discussion**



This quarter at-a-glance

- **What we have known all along is now being recognized and highlighted, our Workforce is ESSENTIAL to keep our country running.**
- **From a Broadband Identity crisis to a unique rebranding opportunity.**
- **Our approach will have to tackle a PRE-COVID19 and POST-COVID19 workforce challenges.**



This quarter at-a-glance

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For Immediate Release

CHAIRMAN PAI LAUNCHES THE KEEP AMERICANS CONNECTED PLEDGE

*Pai Calls on Broadband and Telephone Service Providers to Promote Connectivity for
Americans Impacted by the Disruptions Caused by the Coronavirus Pandemic*

WASHINGTON, March 13, 2020—Yesterday, in multiple phone calls with broadband and telephone service providers and trade associations, Federal Communications Commission Chairman Ajit Pai emphasized the importance of keeping Americans connected as the country experiences serious disruptions caused by the coronavirus outbreak. And in order to ensure that Americans do not lose their broadband or telephone connectivity as a result of these exceptional circumstances, he specifically asked them to take the Keep Americans Connected Pledge.

The Keep Americans Connected Pledge reads as follows:

Given the coronavirus pandemic and its impact on American society, [[Company Name]] pledges for the next 60 days to:

- (1) not terminate service to any residential or small business customers because of their inability to pay their bills due to the disruptions caused by the coronavirus pandemic;
- (2) waive any late fees that any residential or small business customers incur because of their economic circumstances related to the coronavirus pandemic; and
- (3) open its Wi-Fi hotspots to any American who needs them.

World Events:

- Coronavirus Pandemic impacting life as we know it.
- Our Working Group applauds the FCC and Chairman Pai leadership during COVID-19 Outbreak
- **CHAIRMAN PAI LAUNCHES THE KEEP AMERICANS CONNECTED PLEDGE**
 - Calls on Broadband and Telephone Service Providers to Promote Connectivity for Americans Impacted by the Disruptions Caused by the Coronavirus Pandemic

March 25 Update: 580 broadband and telephone service providers have now taken his Keep Americans Connected Pledge, an increase of 190 from last Thursday.

This quarter at-a-glance

Workforce and Training Initiatives – Now More Than Ever

- 3 out of 5 Americans Work for Hourly Wages – Bureau of Labor Statistics
- Nearly 1 in 5 Households Have Lost Work Because Of Pandemic (March 17)
- U.S. DOL ANNOUNCES AVAILABILITY OF UP TO \$100 MILLION IN NATIONAL HEALTH EMERGENCY DISLOCATED WORKER GRANTS IN RESPONSE TO COVID-19 OUTBREAK (March 18)
- A record 3.28 million workers filed claims for unemployment benefits – Five times the previous record high
- Cornell Law School's U.S. Private Sector Job Quality Index
 - Hardest hit areas:
 - Limited- and full-service restaurants, with some 9 million jobs at risk of layoffs
 - Education have some 3.2 million jobs at risk
 - General stores have 2.8 million jobs at risk

This quarter at-a-glance

Workforce and Training Initiatives – Now More Than Ever

- **Least affected - Manufacturing and Constructions**
 - You cannot hire someone with no prior experience
- **We believe that Telecom falls in the same category**

- **One of the challenges we identified**
 - “lower unemployment rate” - workers were “hard to find”
- **THIS WILL CHANGE**
- **With more workers available, will the Telecom and Broadband Deployment accelerate?**
 - Proper training is required (more emphasis on hands-on, and soon)
- **Effect of COVID-19 on the Telecom Job Market?**
 - Many unknowns
 - Will the 5G deployment continue as projected earlier?
 - If yes, given proper training, we **NOW** will have more workers to get the deployment work done sooner

This quarter at-a-glance

Industry Specific

- Department of Labor awarded **\$6M Grant to WIA to advance Workforce Development** – Remarks by Jonathan Aldenstein
- Jan 22, 2020 hearing on “**The 5G Workforce and Obstacles to Broadband Deployment**” Before the Committee on Commerce, Science, and Transportation United States. Commissioner Carr participated as one of the witnesses.
- Workforce Panel During **Nate Unite 2020**. (Three members of our working group were present). Commissioner Carr delivered a workforce development centered message.
- **FCC Commissioner Geoffrey Starks** hosted a roundtable discussion on Feb. 11, and convened a group from civil society, academia, and industry to orient FCC’s role in the Future of Work.

This quarter at-a-glance

Working group Specific:

- **Job skills Group Calls – Bi-monthly (6 calls this quarter)**
- **Subgroups met via conference call at their discretion**
- **Two Subject Matter Experts Invited to speak to get deeper perspective on Apprenticeships and Credentialing:**
 - Deb Bennett – TIRAP Program Director, WIA
 - Peter Janzow – Credly
- **Big focus on discovering and evaluating existing Training Programs and standardizing information about them.**
- **Working Group Member Changes:**
 - Debbie Goldman replaced permanently by Zane Farr
 - Greg Capobianco replaced by Elizabeth Cuttner

This quarter at-a-glance

Working group Specific:

Focused mostly on:

- Organizing data gathered in report format and worked on report introduction
- Recommending steps to attract more skilled professionals (Charge 3)
- Identified and analyzed potential model training programs (Charge 4)
- Started discussions on performance metrics to gauge the effectiveness per stakeholder. (Charge 5)
- Identified the need to better understand the role of Government funding as a key component to succeeding in bridging the gap

Main Takeaways from SME's:

- **Deb Bennett- TIRAP Program Director, WIA**
- **TIRAP- Telecommunications Industry Apprenticeship Program**
<https://www.tirap.org/>
- **Joint venture of telecommunications companies, industry associations and the U.S. Department of Labor (DoL)**
- **Develops DoL-credentialed apprenticeship programs**
- **Partners with stakeholders to promote safety, enhance quality, and enable education and advancement opportunities in the telecom workforce that will meet network infrastructure build out needs.**
- **The Wireless Infrastructure Association (WIA) is the National Sponsor of TIRAP.**

Main Takeaways from SME's:

- **Current Occupations in program:**

- Telecommunications Tower Technician
- Wireless Technician
- Telecommunications Tower Antenna & Line Lead
- Telecommunications Tower Antenna & Line Foreman
- Telecommunications Tower Construction Lead
- Telecommunications Tower Construction Foreman
- Maintenance & Condition Assessment Lead
- Maintenance & Condition Assessment Foreman
- Fiber Optic Technician

Main Takeaways from SME's:

Peter Janzow- Credly

There is a substantial increase in workforce and education credentials:

- 738,000 Different types of credentials
 - 370,000 Higher Education credentials
 - More than 50M digital badges issued
 - More than 25M digital badge earners
- Credentialing provides a standardized way of representing training and a vehicle for scalability.
 - Digital credentialing goes with the worker – he/she “owns” it and it doesn’t stay behind at the training institute.

Main Takeaways from SME's:

TYPES OF DIGITAL CREDENTIALS



EXPERIENCE

Not Measured
Unstructured Learning

Events/Conferences
Participation
Membership
Volunteering
Projects
Hackathons



LEARNING

Not Measured
Structured Learning

Self-Led Learning
Soft Skills
Professionalism
Grit
Competencies
Product Knowledge



VALIDATION

Measured
Validated Learning

Learning + Assessment
Portfolio/ Evidence
SME Review/ Peer Review
Field Based Assessments



CERTIFICATION

Measured
Validated Achievement

Industry Certifications
Diplomas and Degrees
Certificate Programs
Apprenticeships
Licenses

Navigating Standard Occupational Codes on DOL Database- Kelleigh Cole

Job Codes

We are studying Job and Industry Classifications (SOC and NAICS) to determine how these could be more effectively

Job Codes

- The Standard Occupation Classification (SOC) codes are used to categorize every job in the United States into one of 867 categories. These occupations are based on job duties and education and/or training.
- The North American Industry Classification System (NAICS) is the system used to classify businesses and track the growth of the US economy.

Things to consider:

- **How SOC and NAISC codes are being used**
- **Limitations to these systems**
- **Recommendations on how they could be changed or updated**
- **Other statistics that track the broadband industry and workforce**
- **Other coding/classification systems that are being used**

Other Relevant discussion points from Subgroups working sessions

- Started Discussion on types of Performance Metrics to gauge effectiveness (Charge 5):

- **Enrollment**
Enrollment data and trends
- **Equity**
The enrollment trends are disaggregated by race and ethnicity
The outcome metrics for retention, progress, and completion are disaggregated by race and ethnicity
- **College Completion**
Number and percent of college students who exit college with a degree or certificate
- **Post College**
Number and percent of college students employed after exiting college with a degree or certificate
Number and percent of 2-year college students who exit college with a degree and transfer to a 4-year college

Other Relevant discussion points from Subgroups working sessions

Pre-COVID19

- CDL exemptions: Ag, trash, fireworks, and motion pictures. Precedence set and this could be used for telecom.
- There needs to be a study done on the industry with scientific data gathered, so we know the actual state of the industry and salary competitiveness. No reliable data set for industry specific workforce analysis.
- Carriers demanding rigorous background checks impacting contractor's ability to recruit. Approx. 25% of all job offers extended can be executed on after background check.
- Need to understand how local and federal grants can be tapped for Broadband Workforce development. Industry Information is not permeating down to the local level. There seems to be no clear communication between industry and schools, workforce, and other stakeholders.

Training Programs Discovery and Evaluation

Programs Assignments to Subgroup #1

1. **TIRAP** – Telecommunication Industry Registered Apprenticeship Program
2. **Independent Electrical Contractors**
<https://www.iecchesapeake.com/library/public/images/Online-Apprenticeship-Images-F/IEC-Ace-Credit-Information.pdf>
3. **PCCA** is currently working with three schools with a Utility Service Technician Programs in Missouri, Wisconsin and Ohio. State Tech in Missouri is along the farthest with 23 students through the first year and 23 enrolled next year. The school is currently working on a building project that will be a first in the nation that we know about.
4. **Alliance at AT&T.** The Alliance is a joint labor-management program that has trained tens of thousands of union members at AT&T, Avaya, and Nokia to adapt to new technologies and upgrade their skills.
5. **Wake Tech** - <https://www.waketech.edu/>

Programs Assignments to Subgroup #2

1. **Aiken College:** <https://www.atc.edu/Study/Programs-of-Study/Technical-Education/Tower-Installation>
2. **Professional Bachelors and Masters Program in Telecom (e.g. Uni. of MD)**
3. **South East Tech:**
<https://www.southeasttech.edu/programs/wireless-infrastructure/index.php>
<https://www.keloland.com/news/local-news/new-tower-technician-program-looks-to-take-young-job-seekers-to-new-heights/>
4. **NATE Program with DOL Funding:** <https://natehome.com/safety-education/susan-harwood-grant-courses/>
5. **Fiber Optic Association: FOA-University** <https://fiberu.org/#Self-Study%20Courses>

Programs Assignments to Subgroup #3

1. **The Community Technical College system in Wisconsin**
<https://www.witc.edu/continuing-education-and-training/professional-development/broadband-academy>.
2. **SEATAC Airport has Airport University**, a workforce development program that supports employer - Community Tech Ed College partnerships <https://www.portseattle.org/community/workforce-development>
3. **The Last Mile (TLM)**, a non-profit, has offered coding and web-development courses to inmates at San Quentin State Prison in California since 2014, providing inmates with technical training, income, and connections to outside employers that have shown to substantially reduce recidivism. Today, TLM offers software engineering training in 11 facilities in 4 states. This program, and others like it, could easily be used to support the telecom workforce going forward.
4. **Integrated Basic Education and Skills Training (I-BEST) Team Teaching Model**
<https://www.sbctc.edu/colleges-staff/programs-services/i-best/>
5. **Broadband Academy Online Teaching Model** <https://www.witc.edu/continuing-education-and-training/professional-development/broadband-academy>

Sample Program Evaluation Form:

- **2/3 programs started after 2010**
- **Majority of them are endorsed/supported by Industry Players**
- **Community Colleges and Universities:**
 - All of them created programs due to industries' requirement of professionals**
- **Challenges:**
 - Needs central recognition and branding
 - Needs government's funding (state and federal) to scale (remote locations and online presence)
 - Needs mechanism to "transfer" credits, credentials, and students

Institution Name:	Wisconsin Indian Head Technical College
Program Name:	Broadband Academy
Webpage:	https://www.witc.edu/continuing-education-and-training/professional-development/broadband-academy
Inception Date:	2017
Location:	WITC has four campuses in northwest Wisconsin but classes are almost entirely online. The exception is that the Broadband Installer course requires a hands-on assessment at the Rice Lake campus.
Is program Endorsed? (Government/Private Sector) If Yes, Please provide details	The Broadband Academy was endorsed by then-Gov. Walker during a 2017 visit. https://www.wispolitics.com/2017/gov-walker-highlights-workforce-development-broadband-expansion-initiatives-at-wisconsin-indianhead-technical-college/ WCIT received a USDOL grant in February 2020 for 5G apprenticeship programs.
Is program Recipient or Public Grants? If yes, detail	WCIT's Broadband Bootcamp program was funded by a federal Impact grant. https://www.newrichmondchamber.com/news/details/broadband-boot-camp-provides-intro-to-growing-field-witc-program-condenses-classes-into-8-day-session-06-25-2019 In February 2020, WCIT received a \$6 million grant from the USDOL for apprenticeship programs for 5G. That grant is supplemented by over \$9 million in matching support from cash and in-kind contributions from WIA, PCCA, Ditch Witch, and others. https://wia.org/wia-awarded-6-million-dol-grant-to-train-5g-workforce/
Delivery Method (In-Person/On-line/Both)	Entirely online, with the exception of a hands-on assessment for the Broadband Installer course.
Scalability /Geographical Reach: (High/medium/Low)	Local and regional focus. Director noted that one big obstacle to recruiting and scale is that young people (potential students) don't understand how broadband works and why it's important.
Broadband Programs Offered (please include duration, cost, relevant details)	Cost is about \$175 per credit hour. Broadband Customer Service Specialist certificate is 6 credit hours. Broadband Installer technical diploma requires 14 credit hours. Broadband Internet Technician technical diploma requires 37 credit hours. A certain course requires purchase of a \$136 software program. Book costs are \$0 to \$130 depending on the course.
Recruiting Outreach	Their Broadband Bootcamp during the summer serves as a recruitment event. They also recruit at local and regional career fairs, high school events, broadband and trade shows, and via newsletter and social media.
Annual # Graduates	About 280 students take a Broadband Academy class (though most don't do the full program). About 30 complete in Level 1 (Broadband Customer Service certification). There are a "handful" in Level 2 (Broadband Installer diploma). No data offered on Level 3 (Broadband Internet Technician).
Hiring Statistics	Broadband Customer Service Specialist: 100% employed (91% in the industry) per 2017-18 graduate survey responses. Averaging about \$53,000 salary. Broadband Installer: 93% employed (77% in the industry) per 2016-17 graduate survey responses. Average salary unknown. No data on Broadband Internet Technician hiring statistics.
Scholarships available? If yes, provide detail	The Wisconsin State Telecom Foundation provides four grants of \$250 each annually and in 2019 provided five scholarships of \$750 each. A local provider, Mosaic Telecom, offers a single \$1000 scholarship annually.
On-going curricula development to expand	
Certification/Credential provided at end of	Broadband Customer Service Specialist (certificate). Broadband Installer
Stackable credit towards advanced degree?	Yes, the credits stack.

Charges Review

- **Charges:**

- Identify Stakeholders (**completed last year – Fall 2019**)
- Identify and validate Skills Gap (Charge 1) (**completed last year – Dec 2019**)
- Formulate Solutions and Recommendations (Charges 2 & 3) **In progress**
- Training Programs (Charge 4) (**Completed**)
- Performance Evaluation Criteria (Charge 5) – **In Progress**

- **Approach:**

- Working group Expertise
- Subject Matter Expert Calls
- Research
- Comparing notes and collaborate with other industry workforce groups

Focus Next Quarter

- Issuing Recommendations (PreCOVID19/PostCOVID19 Approach)
- Progressing on Report Writing
- Inviting Grant Allocation SME and including Grant access eligibility for each of the stakeholders

Pre and Post COVID-19 Analysis: Example

Pre COVID-19	Post COVID-19	Observations
VISIBILITY ON THE NATIONAL STAGE		
LOW: No specific job classifications/occupational codes on DOL database	HIGH: Universally recognized as essential employees	Opportunity to Re-Brand the Industry; attract new workforce
Broadband identity crisis	DOL to allocate more funding for dislocated workers	How much of \$100M will come to our industry?
DEMAND OF SKILLED EMPLOYEES		
HIGH: Rural and new technology deployment has increased demand for skilled workers	EVEN HIGHER: Workers are not slowing deployment efforts	More skilled workers are needed to meet the increasing demand
	The demand for faster deployment is evident	
CHALLENGES		
Unemployment Rate: Low	Unemployment Rate: High	More workers may be available for upskilling or training in this industry
Hourly Wages & Benefits: Low	Potential for Higher Wages & Benefits to attract new workers	Employer-specific responses to this circumstance will dictate outcomes
Background screenings credentials and basic job qualifications: High	Unknown how this may change based on recent events; perhaps relaxed requirements	Employer-specific responses to this circumstance will dictate outcomes
Availability/Variety of Training & Upskilling Programs: Low	Likely that new online educational platforms will open up. State funding will be more likely to reduce the unemployment rate	Along with State and Federal Funding, Educational Institution or Vendor-specific responses will dictate outcomes
Funding/Scholarships/Grants available to individuals in this industry: Low	Unknown if FEMA will reimburse states/localities for investing in this as an emergency response, DOL, State Agencies likely to invest more	Depends on Federal and State lawmakers

Industry Engagement KEY for rebranding

Tweet



Quick update on the @FCC's work under Chairman @AjitPaiFCC to Keep Americans Connected during COVID-19:

- ✓ Boosting Networks
- ✓ Expanding Telehealth
- ✓ Assisting Low-Income
- ✓ Enhancing Remote Learning for Kids
- ✓ Access for Deaf & Hard of Hearing
- ✓ Broadcaster PSAs



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cisa.gov/identifying-cr...



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OPEN FLOOR FOR COMMENTS AND DISCUSSION

Working Group Charges

- **Develop recommendations to make more widely available and improve job skills training and development opportunities for the broadband infrastructure deployment workforce.**
 1. **Identify any gaps** in broadband infrastructure deployment skills that could inhibit the pace of deployment of **fixed and mobile broadband connectivity** across the nation.
 2. For each issue identified, **formulate possible solutions that stakeholders** could implement. Proposed solutions, to the extent possible, should be **adaptable and scalable** to different deployment areas and technologies to encourage widespread adoption.

Working Group Charges

3. **Recommend possible steps** that stakeholders could take to **attract more skilled professionals** to join the broadband infrastructure deployment workforce.
4. Identify any **existing job skills and training programs** that could serve **as a model** for stakeholders in developing measures to bridge any skills gaps in broadband infrastructure deployment.
5. Recommend possible **performance metrics to gauge the effectiveness** of existing and future job skills and training programs and develop steps that can be taken to continually improve the effectiveness of such programs.

STRUCTURE OF THE REPORT:

- 1) Introduction and Background**
 - **Working Group Charges**
- 2) Identification of Stakeholders**
 - **How the report is structured**
- 3) Skills Gap for Broadband Deployment and Associated Challenges**
 - **Why do we have skills gap? (three sub-sections, one per each subgroup)**
 - **Results in Brief or Summary of Challenges and Solutions (response from the working group members to the questionnaire)**
- 4) Proposed Solution – How to attract more skilled professionals**
 - **(has to be adaptable and scalable)**
 - **(has to be applicable to different deployment areas and technologies)**
- 5) Examples of Successful Job Training Programs**
 - **Recommendation on Nationwide Roll Out**
- 6) Performance Metrics to gauge the effectiveness**
- 7) Definition/Terminology/Glossary of terms**