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SUBJECT: USACE Instrumentation and Performance Monitoring Sub-Community of Practice under the Geotechnical, Geology, and Materials Community of Practice (GGM CoP)

CATEGORY: For Information

1. References:

- a. ER 25-1-8, USACE Communities of Practice, 31 March 2011

2. Purpose. The purpose of this ECB is to provide information on the mission and activities of the Instrumentation and Performance Monitoring (IPM) Sub-Community of Practice (sub-CoP).

3. The mission of the IPM sub-CoP is to facilitate the sharing of information and resources; act as a proponent for the application of appropriate instrumentation and performance monitoring programs; and apply corresponding evaluations of resultant data across USACE infrastructure. This mission will be accomplished through the advocacy and enhancement of the technical expertise of all members of the IPM sub-CoP, by the sharing of expertise, capabilities, and knowledge across USACE in the field of instrumentation and performance monitoring. The IPM sub-CoP focuses on the following critical activities:

- a. Effective collaboration and education opportunities throughout the sub-CoP, maximizing opportunities for face-to-face time within the sub-CoP and IPM community.
- b. Effective collaboration with other CoPs and sub-CoPs.
- c. Promote diverse comprehensive training opportunities, to include field and classroom training, distance learning (e.g., webinars), and developmental assignments (e.g. field, design).
- d. Maintain core competencies as a world class engineering organization.
- e. Identify instrumentation and performance monitoring subject matter experts (SMEs) capable of providing support within USACE.
- f. Identify research needs and promote the dissemination of new technologies.
- g. Build technical networks across the nation for mentoring and leveraging of expertise.
- h. Promote the state-of-practice in instrumentation and performance monitoring.
- i. Establish a national level database and appropriate level user interface for data visualizations and evaluation.

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j. Promote collaborative engagements with instrumentation and performance monitoring professionals within other government agencies, universities, and professional societies.

k. Promote consistency within the CoP to enhance quality and facilitate regionally integrated execution.

l. Review and identify common software needs and support enterprise software licenses as appropriate.

m. Forecast future mission needs and changing priorities within the CoP to maintain technical relevancy.

4. The IPM Management Group (HQ Proponent and MSC Representatives) conducts quarterly meetings and regular webinars. Quarterly meetings provide progress updates on committee efforts, address challenges encountered by the community, and inform members on upcoming developmental and training opportunities. Regular webinars are held to discuss topics of interest to the instrumentation community, and improve the technical knowledge of committee members.

5. IPM Technical Focus Teams (TFT) address specific issues or requirements as needs arise. TFT team members will be authorized by the IPM sub-CoP Management Group. Focus areas may include, but are not limited to: technical developments throughout industry and USACE; Subject Matter Experts (SMEs) identification; training; USACE Research & Development, instrumentation data acquisition and transfer; technical software, data evaluation.

6. All Districts are encouraged to join the quarterly calls and webinar discussions as well as support other IPM activities.

7. Information regarding the IPM sub-CoP is posted and maintained at the following TEN page: <https://apps.usace.army.mil/sites/TEN/wiki/GGMInstruments.aspx>

8. The point of contact (POC) for the IPM sub-CoP is Dr. Georgette Hlepas, PhD, PE, CECW-EC, (202) 761-7417. HQUSACE POC for this ECB is Mr. Marty Goff, P.G., CECW-CE, 202-761-1992.

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Encl.

Attachment A – Charter USACE Engineering & Construction Geotech, Geology, and Materials Sub-Community of Practice for Instrumentation and Performance Monitoring

**CHARTER
USACE ENGINEERING & CONSTRUCTION
GEOTECH, GEOLOGY, AND MATERIALS
SUB-COMMUNITY OF PRACTICE
FOR
INSTRUMENTATION AND PERFORMANCE MONITORING**

1. PURPOSE.

The US Army Corps of Engineers (USACE) issued ER 25-1-8, USACE Communities of Practice (CoP) in March 2011 to provide the general policy and framework for the establishment, sustainment, operations, roles and life cycle of CoPs across the organization. The CoP concept supports effective communication, learning, and relationship development within the USACE team. From ER 25-1-8, the Guiding Principles for the implementation of effective CoPs are that they:

- a. Are formed around shared interest in accomplishing the USACE mission.
- b. Are built on trust, exhibited by the open and self-less sharing of expertise.
- c. Provide value to their members in professional growth and problem solving.
- d. Are engines of learning by bringing together knowledge and expertise.
- e. Are built on relationships, with ties to other communities.
- f. Promote community-wide communication.
- g. Are different from a team, as an enduring source of knowledge transfer.
- h. Are different from a functional office, being unbound by geography, organization, or hierarchy.

The Dam and Levee Performance Monitoring Committee (DLPMC) has proposed that the committee be recognized as a sub-CoP. The DLPMC has fulfilled the roles as defined by ER 25-1-8 as a sub-CoP without the recognition of being a sub-CoP since 2015 and has recognized a long-term need for an Instrumentation and Performance Monitoring sub-CoP level community. The DLPMC has performed Instrumentation and Performance Monitoring Peer Reviews across the entire USACE Dam Safety Program, documented best practices, and has made recommendations to the improvement of District programs. The DLPMC has concluded that there are vast shortcomings in the instrumentation and monitoring programs nationwide in need of resources and improvements. The DLPMC has been providing resources, shared knowledge, lessons learned, and state-of-practice information USACE-wide to aid in the advancement of dam and levee safety programs. The committee has developed an instrumentation and performance monitoring training course, provided regular updates to the course, and the DLPMC members make up the course instructors. In addition, the Committee was instrumental in developing the initial draft update to the EM 1110-2-1908 Instrumentation and Monitoring of Embankment Dams and Levees (currently in HQ review) and has embarked on an effort to identify and implement an improved National level solution to the instrumentation data acquisition, storage, and visualization tools. The DLPMC has a focus of ensuring the USACE capability to not only design and

implement appropriate level instrumentation and monitoring programs, but also to evaluate the resultant data in a comprehensive manner as related to dam safety and potential failure modes. The Dam Safety CoP and the Geotechnical, Geology, and Materials (GG&M) CoP have both endorsed the DLPMC becoming a recognized sub-CoP to the GG&M CoP.

2. MISSION STATEMENT.

The mission of the Instrumentation and Performance Monitoring (IPM) sub-CoP is to facilitate the sharing of information and resources, and act as a proponent for the application of appropriate instrumentation programs as well as appropriate level evaluation of resultant data across USACE Missions. This mission is to be accomplished through the advocacy and enhancement of the technical expertise of all members of the IPM sub-CoP, sharing of expertise, capabilities, and knowledge transfer across the USACE in the field of instrumentation and performance monitoring of USACE projects.

3. OBJECTIVES.

To support the stated mission, the IMP sub-CoP will focus on the following critical activities:

- a. Effective sharing of knowledge and education opportunities throughout the sub-CoP, maximizing opportunities for face-to-face time within the sub-CoP and IMP community.
- b. Promote a wide range of training opportunities, to include field and classroom training, distance learning (e.g., webinars), and developmental assignments (e.g. field, lab, design).
- c. Maintain core competencies as a world class engineering organization.
- d. Identify subject matter experts (SMEs) capable of providing support within USACE.
- e. Identify research needs and promote the dissemination of new technologies.
- f. Build technical networks across the nation for mentoring and leveraging of expertise.
- g. Promote the state-of-practice in instrumentation and performance monitoring and establish a national level database and appropriate level front end for data visualizations and evaluation.
- h. Promote engagements with other government agencies, universities, and professional societies.
- i. Promote consistency within the community to enhance quality and facilitate regionally integrated execution.
- j. Review and identify common software needs and support corporate software licenses.
- k. Forecast future mission needs and changing priorities to maintain technical relevancy.
- l. Identify, collect, and disseminate best practices and lessons learned.
- m. Advocate for sufficient in-house work and capabilities to attract and retain expert technical staff, and build the bench for the future.

4. ORGANIZATION.

- a. The IMP sub-COP will be managed by a group of senior USACE engineers and geologists, or related professionals with specialized experience in instrumentation and performance monitoring, in positions having national visibility over one or more USACE programs that use, or could benefit from instrumentation and monitoring systems. These personnel reside across USACE.
- b. Technical Focus Teams (TFTs) will be stood-up to address specific issues or requirements as needs arise. Initial TFT team members will be authorized by the IMP sub-COP management group. The assigned TFT team leader(s) will brief the IMP sub-COP management group at least annually on the issues specific to the team.

5. RESPONSIBILITIES.

- a. **IMP sub-COP management group.** It is the responsibility of the management group to:
 - Provide annual updates to the Geotech, Geology, and Materials CoP regarding all activities of the IMP sub-CoP.
 - Define the objectives, organization and operating guidelines for the IMP sub-CoP.
 - Serve as advocates for the IMP sub-CoP in achieving its objectives, to include providing input and advice on sub-CoP matters to Dam Safety CoP, Levee Safety CoP, Dam Safety Steering Committee, GG&M Cop, and HQ senior leadership.
 - Coordinate with and support other CoPs, Centers, and programs (e.g. Dam Safety Modification Mandatory Center of Expertise, Risk Management Center, Dam and Levee Safety, etc.) to ensure that the technical expertise of the IMP sub-CoP is being leveraged.
 - Ensure full dissemination to the IMP sub-CoP members of activities being done by other CoPs and Centers that affect the IMP sub-CoP.
 - Establish and maintain an IMP sub-CoP TEN site is maintained as the central, online source of information, activities, and lessons learned for the membership.
 - Develop metrics to track and adjust sub-CoP performance as needed in meeting its stated objectives.
 - Select members and team leaders for the TFTs, and review activities and membership annually. Monitor activities by these teams for compliance with CoP guidelines and for consistency among teams.
- b. **TFTs.** Within its focus area, each TFT will perform duties as identified in the documents establishing the TFT. These may include, but are not limited to:

- Become aware of ongoing technical work throughout USACE; become aware of technical developments throughout industry; and develop a strategy to share key information and lessons learned.
- Identify specialized topics, and identify SMEs who may be contacted for assistance in those topics; identify appropriate SMEs to represent USACE in the professional community by participating on committees and making presentations; evaluate needs for additional expertise within USACE; and evaluate needs for formalized USACE centers of expertise. (Funding will be provided for travel of district staff representing the IMP sub-CoP at events.)
- Become familiar with USACE and other training opportunities; evaluate training opportunities against USACE technical needs; define course content for any in-house training, and recommend development teams and trainers; and disseminate information about training opportunities.
- Become familiar with current USACE R&D work units; facilitate technical transfer of key R&D outputs; and recommend and prioritize additional research.
- Assess the USACE instrumentation data acquisition and transfer; evaluate existing systems very technical need; recommend improvements or development of systems for common use throughout USACE
- Assess technical software; evaluate software against USACE technical needs; recommend additional software development; and recommend corporate software for common use throughout USACE.

6. OPERATING GUIDELINES.

- a. **IMP Management Group Meetings.** The management group will conduct quarterly teleconferences and one annual face-to-face meeting in conjunction with the National Geotech, Geology, and Materials CoP Meetings. Unanimous agreement among assigned members will establish actionable tasks and actions, such as standing-up a TFT distributing ECBs, or other activity that can have a beneficial or deleterious effect on the advancement of instrumentation and performance monitoring practices applied in USACE programs.
- b. **TFTs.** Each TFT should meet in person once a year, supplemented with virtual or in-person meetings as needed. Each TFT will govern its activities to address TFT-specific tasks and assignments. TFTs shall not publish information under the auspices of the IMP sub-COP without written authorization from the IMP management group.
- c. **Website.** The IMP sub-CoP will utilize a website as its primary means to disseminate information. The current approved website for use by all E&C CoPs is the TEN website:
<https://apps.usace.army.mil/sites/TEN/GM/Pages/default.aspx>). The IMP management group will determine which sub-CoP members have content editing privileges.

- d. **Additional Guidelines.** As the sub-CoP gains experience with sub-CoP operations, these guidelines are expected to become more comprehensive.

7. FUNDING.

All personnel participation is voluntary and must be funded by each participant's home office until such a time as funding for the sub-CoP activities becomes available.

8. APPROVAL

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Geotechnical, Geology and Materials CoP Lead
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