LIFT IWS Challenge

Guidance for Solution Submission

The LIFT Intelligent Water Systems Challenge: Judging Criteria

An Opportunity for Vendors, Civic Hackers, and Students

Today's water industry operates complex treatment, collection, and distribution systems to protect public and ecological health. These systems are increasingly instrumented to monitor key process indicators and other parameters to facilitate operations. The Water Research Foundation (WRF) and Water Environment Federation (WEF) LIFT program – in collaboration with the American Water Works Association, BlueTech Research, Cleveland Water Alliance, Smart Water Networks Forum (SWAN), The International Society of Automation Water and Wastewater Division, The Water Council, and Water Technology Acceleration Project (WaterTAP) – is therefore holding the first-ever Intelligent Water Systems Challenge to demonstrate the value to utilities of these "intelligent water systems." The Challenge seeks to foster the adoption of smart water technologies by showcasing the ability of intelligent water systems to effectively leverage data for better decisions.

Solution Goals:

- Demonstrate the value of intelligent water systems
- Leverage data using the best available tools to better understand and make decisions.

Prizes: The Challenge will recognize the best solutions developed by Challenge participants, offering a top prize of $25,000. Recognition will also be given to innovative approaches and to outstanding contributions from students or young professionals.

The Challenge will work with water utilities around the world to identify individual challenges. Teams will work to address these individual challenges through innovative analytics applied to data from utilities' intelligent water systems. Some utilities may have capacity and interest to participate directly on teams, while other utilities may limit their involvement to furnishing a problem statement and relevant data. The Challenge will therefore distinguish between two types of solvers:

- Regular teams will select a Challenge problem statement provided by a utility and develop and implement a solution approach with minimal interaction with the utility. Multiple regular teams can select the same challenge and independently implement a solution.
- Partnered teams have one or more members from a utility active on the team. They will work with the other team members directly to define a problem statement, plan an approach, and implement a solution based on datasets provided by that utility.

Eligibility

Open to any individual that has completed registration. Participation by utilitiy members, technology providers, consultants, academia, and students is encouraged. There is no participation limit for any single organization.

Teams can consist of a minimum of 1 person and a maximum of 6 individuals. Each team member must complete an individual registration form.

Challenge Timeline

April 6	Registration deadline
April 23	Challenge Plan deadline
April 23 – May 4	Optional check-in with Steering Committee
June 18 – June 22	Required check-in with Steering Committee
September 4	Final Solution deadline
September 14	Judges' scoring completed
September 17	Finalists notified
October 1	Finalist presentations and awards ceremony at WEFTEC 2018

Requirements

Team Lead registering for all the team members with contact information is required. Individual registration by each team member is preferred but not required. If an individual is on multiple teams, they must disclose to all teams their participation and role in each team for transparency and clarify participation expectations.

Each team will have one identified Team Lead.

Submission of Challenge Plan and Final Solution via e-mail to Fidan Karimova (fkarimova@waterrf.org) by 11:59 PM EST on the associated deadline. Materials submitted via another format or to another Steering Committee member will not be accepted. No additions or modifications to the submitted materials will be accepted after the deadline.

- Challenge Plan deadline is April 23, 2018. Plan must be no longer than 3 pages.
- Final Solution deadline is September 4. Solution must be no longer than 7 pages and may include an appendix that will not count towards the maximum page limit.

If previous work has been done on the proposed problem, teams must clearly articulate the existing work and the intended scope of work to be done under this Challenge period in the Challenge Plan.

If a proprietary technology or software is part of the Final Solution, teams must indicate in the submission materials and request signed NDA forms from steering committee members and judges. The Challenge is not responsible for managing intellectual property rights.

Challenge Plan Submission

Each team should submit a Challenge Plan that will be provided to the Steering Committee and judges. The Challenge Plan must be submitted via e-mail to Fidan Karimova (fkarimova@waterrf.org) by April 23, 2018 at 11:59 p.m. EST. The Plan must be no longer than 3 pages.

The Challenge Plan must include (but is not limited to):

The team:

- Identify if this is a partnered team or regular team
- Identify the Team Lead, who will serve as the primary point of contact for the Challenge
- For each team member include: name, title, organization, email, and skill-set/area of expertise
- Description of each team member's role and responsibilities

The Problem Statement:

- Explanation of the problem/need faced by the utility that the team is solving for
- Explanation of the desired outcome for the solution. What is the target or goal that is trying to be met? What metrics will be used to evaluate progress and success?

The Intelligent Water System:

- Describe the current system (e.g. data source, technology used, networking, system architecture, O&M) that is relevant to the problem being solved.
- If previous work has been done on the proposed problem, please clearly articulate the existing work and the intended scope of work to be done under this Challenge period

The Plan:

- Description of proposed solution, level of effort and timeline; may include visuals or graphics. Teams should note if for the Challenge the solution is a pilot or a full-scale solution.
- Timeline to implement proposed solution.

Final Solution Submission

Each team should submit a Final Solution that will be provided to the Steering Committee and judges. The Final Solution must be submitted via e-mail to Fidan Karimova (fkarimova@waterrf.org) by September 4, 2018 at 11:59 p.m. EST. The Plan must be no longer than 7 pages. Appendices will not count toward the maximum page count.

The Final Solution must include (but is not limited to):

The Team:

- Names of Team Lead and members
- Identify if any changes to the team have occurred during the duration of the Challenge

Problem Statement:

- This portion of the Solution should be a maximum of 2 pages
- Concisely describe the problem/need the Team is solving for
- Describe key considerations and the desired outcome

The Solution:

- This portion of the Solution should be a maximum of 5 pages
- Recap the Intelligent Water System and any possible modifications or additions identified to meet the outcome goal
- Description of the implementation and whether any adjustments were made.
- Quantified and/or qualified value add of the solution
- Next steps for the solution beyond the Challenge
- Outline financial support needed or considerations
- Considerations of replication by other utilities to address a similar problem
- Description of any difficulties faced and how the team mitigated them
- How will the results of the solution be communicated and used by the utility
- Identify data streams and QA/QC considerations
- Analysis and interpretation to support the solution

Judging Criteria

The following criteria will be used by the judges to evaluate materials submitted by teams.

Intelligent Water Systems Challenge Judging Sheet

TEAM NAME	(team name)		
JUDGE	(judge name)		
SCORE			**out of 140**

	Raw (0-10)	x Weight =	Score
TEAM			
1 **Team** includes necessary skills and has appropriate utility input or *(partnered teams only)* representation.		x 1.0 =	out of 10
PLAN			
2 **Problem Statement** that shows understanding of how analytics can address utilities' challenges in utilities' terms *(partnered teams only)*.		x 2.0 =	out of 20
3 **Characterization of the Intelligent Water System** by describing the existing system or its salient parts.		x 1.0 =	out of 10
4 **Plan** that lays out a realistic timeline and approach for achieving the intended solution.		x 1.0 =	out of 10
IMPLEMENT			
5 **Data** streams are clearly identified and **QA/QC** appropriately discussed.		x 2.0 =	out of 20
6 **Analysis & Interpretation** deliver results that clearly support the intended solution.		x 2.0 =	out of 20
7 **Communication & Use** provide actionable results supporting decisions.		x 2.0 =	out of 20
8 **The Solution** meets utility expectations using appropriate tools.		x 2.0 =	out of 20
JUDGE'S IMPRESSIONS			
9 **Recognition** of alignment with IWSC goals, scalability and sustainability, lessons learned, and more.		x 1.0 =	out of 10

COMMENTS