

A Commentary on Welding Simulators and IoT

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Tit Bit in Welding The objective of Applying Welding simulators and IoT as I understand is....

1. Give heads up training to new welders

Are we are going to recruit ITI trained welders/ experienced welders, or are we talking of 10th Std pass as company trainees for longer plan of Khalapur? For second option, simulators will work very well and for the first, we need to find if simulators have data base of our Alloys and thickness and process with additional accessories, otherwise it will serve only 30-40% of the benefit.

2. Identify the areas where they may create defects and why. There by train them with visual aid.

This in my opinion would be IoT and similar exercise has already started by Narendra. In such cases, we need to identify right sensors, or software and add to it our intelligence of when defect is likely to occur if 1,2,3 is beyond tolerance. No standard software or simulator can give this to us as ready to use.

3. For trained welders, it could be a tool to identify where they may create error if parameters are wrong or they slow down, speed up, act.

Once again as above, our data base is important to educate them.

4. It may also help to regulate cycle time by indicating best speed of welding etc.

If we want to use it as productivity tool it has to be combo of Simulation and IoT.

5. From what I understand from airbus, they use such tools to daily/ weekly qualify the welders and then allow them on to the actual material. Airbus has been critical on this, as we do not have any such provision.

Simulators if customised, can qualify for critical joints for example, out of position joints, intricate joints, last closing joints (I am sure you will feel need when we will start welding of GTRE 55KN Kaveri version engine parts) as these parts metallurgically can be welded 2/3 times but dimensionally we cannot offer and hence, first time right and every time right, to maintain, simulated qualifications will help, or otherwise we need to wait for welding, FDP/ X-Ray/ UT etc.

For WPQ i.e. welders adaptation plate or for machine and environmental conditions in limited way is to weld near the work place using similar or same machine and consumables. In simulator except for welders adaptation to 50-60%, nothing else can be simulated or if we wish it will be very expensive and IoT will help to do so. I think quick completion of Narendras IoT welding project will bring in lot of clarity.