UX Design | Welding Pipe IOT

Description:

- Welding Pipe IOT is a Mechanism for Internal Welding and External Welding in 6” pipe for oil industry.

- It includes internal welding, external welding, power control and hydraulic control with help of Android app, Web-app and hardware remote.

Technology:

- HTML5, Android, Node.JS, MongoDB


Welding Pipe IOT
WELD CONFIG
REPLAY
SETTING
STATISTICS
FIRMWARE UPLOAD
CALIBRATION TOOL
IWM Module
Pass Name:NA
Zone Name:NA
Job No:I
Joint No:W0002
Welding Pipe IoT
OSCILLATION DATA
Center Position:
Width:
Frequency:
ROTATION DATA
Current Position:
Rotation Speed:
LINEAR MOVE DATA
Current Position:
Linear Speed:
HORIZONTAL MOVE DATA
Horizontal Position:
Horizontal Speed:
ANGULAR MOVE DATA
Angular Position:
Angular Speed:
VERTICAL MOVE DATA
Vertical Position:
Vertical Speed:
Camera View
Data View
Torch 1
Torch 2
Torch 3
Torch 4
ANGLE
DWELL
WIDTH
Rotate
HOME
Alt
REVERSE
Movement
FORWORD
CONTI SCAN
GAS
CONTACTOR
F. EXP
R. EXP
CYCLE
ARC
STOP
IWM
EWM
Dynamic

WeldConfig

- In this section user can performed operation related to internal, External welding machine with help of static remote and dynamic remote.

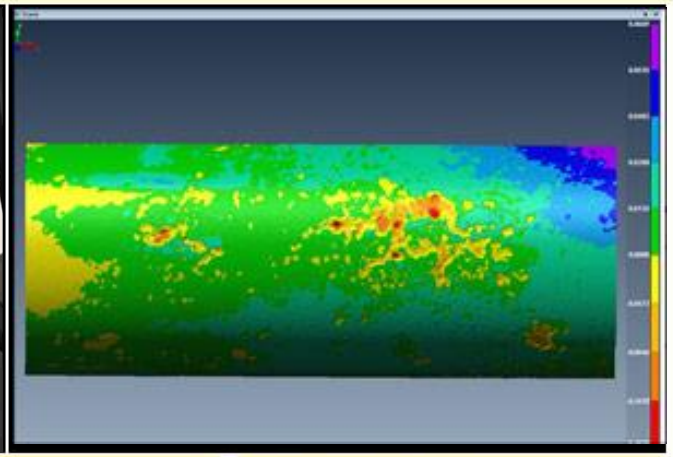
- It also provide facility to examine real time welding related data using laser camera, HD-view camera and different graph.

Welding Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

IWM Module

Pass Name:NA | Zone Name:NA | Job No:I | Joint No:W0002



OSCILLATION DATA	ROTATION DATA	LINEAR MOVE DATA
Center Position:	Current Position:	Current Position:
Width:	Rotation Speed:	Linear Speed:
Frequency:		

HORIZONTAL MOVE DATA	ANGULAR MOVE DATA	VERTICAL MOVE DATA
Horizontal Position:	Angular Position:	Vertical Position:
Horizontal Speed:	Angular Speed:	Vertical Speed:

Camera View | Data View

Torch 1 | Torch 2 | Torch 3 | Torch 4

ANGLE | DWELL | WIDTH

ANGLE | DWELL | WIDTH

Alt

Rotate | HOME

REVERSE | Movement | FORWORD | CONTI SCAN

GAS | CONTACTOR | F. EXP | R. EXP

CYCLE | ARC | STOP

IWM | EWM | Dynamic

Welding
Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

IWM Module

Select widget: Select Create

Oscillation Chart

Oscillation Data

Horizontal Position:

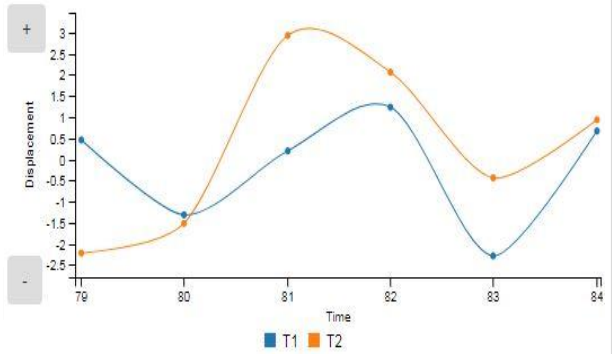
Horizontal Speed:

Rotation Data

Current Position:

Rotation Speed:

Position Trace

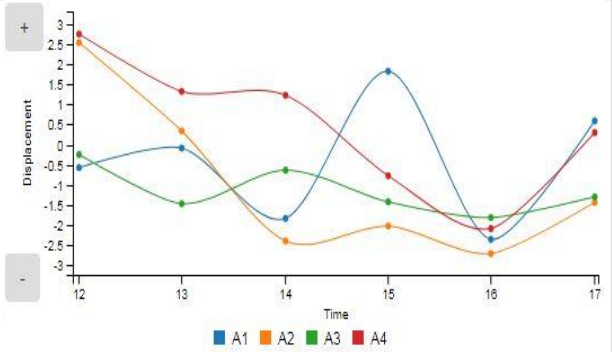


Analog Signal Chart

Signal	Value
A1	
A2	
A3	
A4	

A1 A2 A3 A4

Analog Signal Graph



Digital Signal Chart

Digital Signal Graph

Camera View | Data View

Torch 1 | Torch 2 | Torch 3 | Torch 4

ANGLE | DWELL | WIDTH

ANGLE | DWELL | WIDTH

Alt

Rotate

HOME

REVERSE | Movement | FORWORD

CONTI SCAN

GAS | CONTACTOR | F. EXP | R. EXP

CYCLE | ARC | STOP

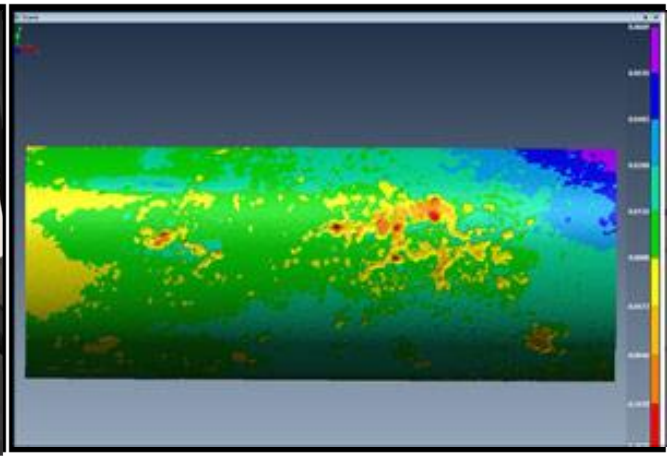
IWM | EWM | Dynamic

Welding Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

EWM Module

Pass Name: Zone Name: Job No: Joint No:



OSCILLATION DATA	ROTATION DATA	HORIZONTAL MOVE DATA
Center Position:	Current Position:	Horizontal Position:
Width:	Rotation Speed:	Horizontal Speed:
Frequency:		

ANGULAR MOVE DATA	VERTICAL MOVE DATA
Angular Position:	Vertical Position:
Angular Speed:	Vertical Speed:

Camera View | Data View

Torch 1 | Torch 2 | Torch 3 | Torch 4

ANGLE | DWELL | WIDTH

ANGLE | DWELL | WIDTH

Rotate

HOME

Alt

CONTI SCAN

GAS | CONTACTOR

CYCLE | ARC | STOP

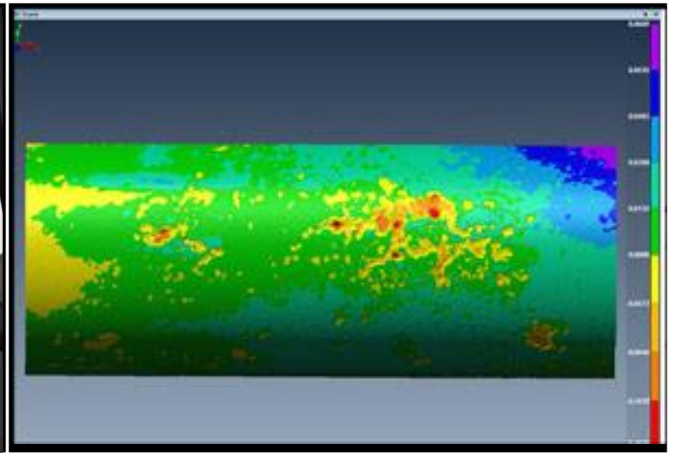
IWM | EWM | Dynamic

Welding Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

IWM Module | EWM Module

Pass Name:NA | Zone Name:NA | Job No:I | Joint No:W0002



OSCILLATION DATA	ROTATION DATA	LINEAR MOVE DATA
Center Position:	Current Position:	Current Position:
Width:	Rotation Speed:	Linear Speed:
Frequency:		

HORIZONTAL MOVE DATA	ANGULAR MOVE DATA	VERTICAL MOVE DATA
Horizontal Position:	Angular Position:	Vertical Position:
Horizontal Speed:	Angular Speed:	Vertical Speed:

Camera View | Data View

PLAY | NEXT PASS

Dynamic Control

- [x] IWM ASID: AS0001
- [ ] EWM ASID: AS0001
- Phase Difference: 0 degree

Current Setting	
IWM Weld Data	EWM Weld Data
Frequency:	
Width:	
Wire Feed Speed:	
Travel Speed:	
Ending Angle:	
Target Voltage:	
Target Current:	
Weld Program No.:	

IWM | EWM | Dynamic

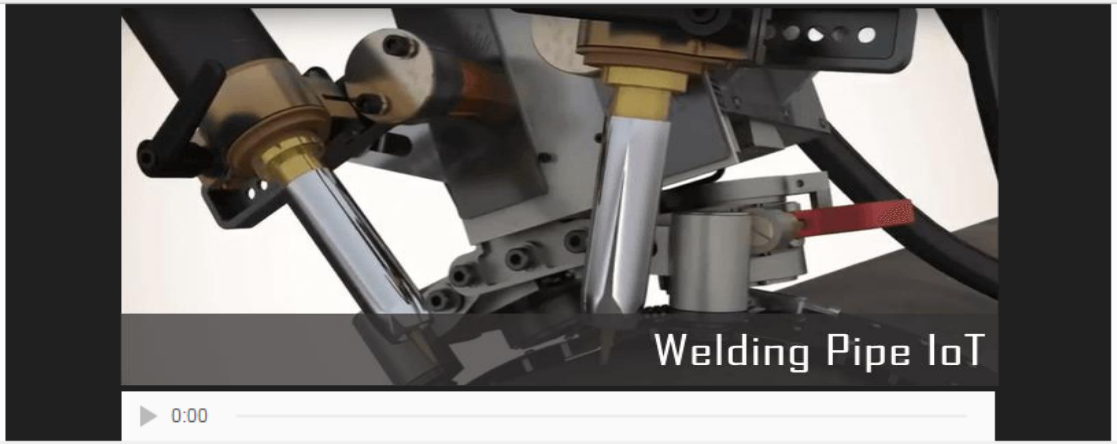
Replay

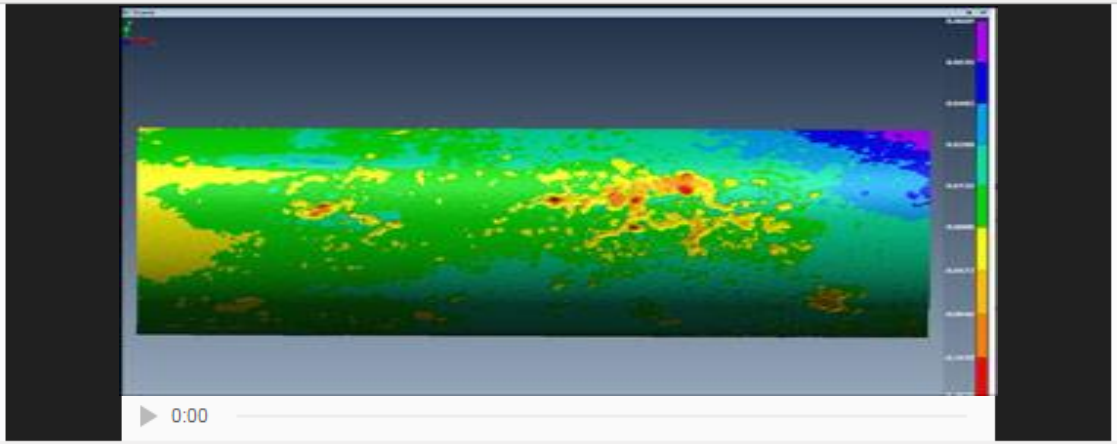
- User can examine welding process , its recorded streaming , data in chart format using weld-id

Welding Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

ASID: Select Automatic Sequence Id | Run ID: | Video ID: | Reset





Analog data | Digital data | Oscillation

Analog Signal Chart

signal	Value
A1	
A2	
A3	
A4	

Analog Signal Graph

IWM Replay | EWM Replay

Setting

- User can Store weld-operation , motor constant , dynamic preformation related value in mongo-DB using metric or imperial unit system.

Static Control
Dynamic Control
Motor Constant

Torch | Rotation | Movement

Torch Module

Oscillation Config

Oscillation Config

Width	8	mm
Width Increment	1	mm
Frequency	1	hz
Dwell Left	30	ms
Dwell Right	30	ms
Dwell Increment	10	ms
Center Adjust Distance	1	mm

Horizantal Move

Speed	20	mm/s
Step Increment	2	mm

Submit

Torch Angle

Measurement

Static Control
Dynamic Control
Motor Constant

Job Setup | Weld Setup | Help

Job Param Setup

Identification		
Dynamic Seq. ID:		AS0001
Job ID:		J0001
Joint ID:		W0001
Motor Jog Setup		
Horizonatal Jog Speed	mm	10
Vertical Jog Speed	mm	10
Angular Jog Speed	degree/s	10
Travel Jog Speed	mm	10

Update | Delete

Welding
Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

Static Control

Dynamic Control

Motor Constant

Job Setup | Weld Setup | Help

Weld Param Setup

Select Pass: P0001 Add

Pass P0001 out of 1

Total Zone:7

		Current Pass : Pass P0001						
Pass Information								
Horizontal Jog Increment	mm	2						
Vertical Jog Increment	mm	2						
Angular Jog Increment	degree	4						
OSCI Center Adjust	mm	1						
Rotation Direction		anti-clockwise						
Travel RampUp Time	sec	3						
Travel RampDown Time	sec	3						
ZONE Parameters		**Z0001**	**Z0002**	**Z0003**	**Z0004**	**Z0005**	**Z0006**	**Z0008**
Ending Angle	degree	50	100	150	200	250	360	0
OSCI Width	mm	3	10	2.5	6	7	6	5
OSCI Frequency	hz	1	1.2	1.5	2	2	0.8	3.5
Dwell Left	ms	50	0	50	0	50	0	0
Dwell Right	ms	50	0	50	0	50	0	0
Travel speed	degree/s	3	4	5	6	7	8	10

Update

IWM Config | EWM Config | Network

Static Control
Dynamic Control
Motor Constant

Torch | Rotation | Movement

Torch Motor Constant

Oscillation

Oscillation Motor Constant

Step-Angle	1.8	degree
Translation Factor	6	
Microsteps Resolution	64	
Max Speed	1150	rpm
Pulse Divisor	0	
Ramp Divisor	0	
Max Current	128	Amp
Ramp Percentage	13	%
Interpolation	Enable	

Submit

Torch Angle

Vertical Move

Statistics

- User can view real time statistics data of different module like torch , rotation, movement, central unit etc.

Welding
Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

Torch

Rotation

Movement

CPU Usage

CPU Statistics

User

System

Idle

Memory Usage

Memory Statistics

Total Memory

Free Memory

Used

Cached

Network Statistics

Process Statistics

App Logs

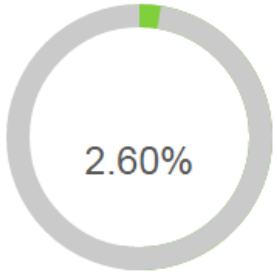
Error Logs

IWM Statistics | EWM Statistics | CU Statistics

Welding
Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

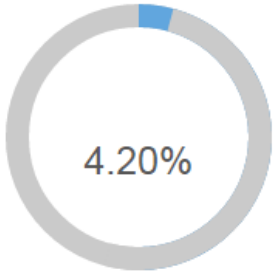
CPU Usage



CPU Statistics

User	1.9 %
System	0.7 %
Idle	97.2 %

Memory Usage



Memory Statistics

Total Memory	3826428 K
Free Memory	3665620
Used	160808
Cached	9704

Network Statistics

Network Statistics

Protocol	Received	Sent
IP	115020	162140
ICMP	12	5
ICMPMsg	12	5
TCP	114402	161900
UDP	127	150
IPExt	14833757	47380901

Process Statistics

Process Statistics

PID	User	MEM%	CPU%	Process Name
3076	root	1.2	22.2	node
3970	root	0.0	11.1	top
1	root	0.0	0.0	init
2	root	0.0	0.0	kthreadd
3	root	0.0	0.0	ksoftirqd/0
5	root	0.0	0.0	kworker/u:0
6	root	0.0	0.0	migration/0

App Logs

Error Logs

IWM Statistics | EWM Statistics | CU Statistics

firmware

- User can view current firmware version as well as update firmware of software in real time.

Welding
Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

Sign In

admin

••••••••

Forgot Password?

Login

Welding
Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

Hello , Admin Log out

System Update

Module Information

Select Module : Torch_IWM

Version	Application Firmware
Current Version	
Updated Version	

Upload To

Select Firmware : Choose Files No file chosen Upload

Download To

Select Firmware : Torch_IWM_v1.0 Download

calibration

- User can examine each module expected result and actual result manually here .

Welding
Pipe IOT

WELD CONFIG | REPLAY | SETTING | STATISTICS | FIRMWARE UPLOAD | CALIBRATION TOOL

Stop 00:00 Reset

Torch Angle

Speed: 0.1 degree/s

Distance: 0.1 degree

Result Window:

Exp. Time	Exp. Pos	Exp. RPM
0 ms	0 degree	0 rpm

Angle + | Angle -

Horizontal Move

Speed: 0.1 mm/s

Distance: 0.1 mm

Result Window:

Exp. Time	Exp. Pos	Exp. RPM
0 ms	0 mm	0 rpm

Left | Right

Vertical Move

Speed: 0.1 mm/s

Distance: 0.1 mm

Result Window:

Exp. Time	Exp. Pos	Exp. RPM
0 ms	0 mm	0 rpm

Up | Down

Rotation

Speed: 0.1 degree/s

Distance: 1 degree

Result Window:

Exp. Time	Exp. Pos	Exp. RPM
0 ms	0 degree	0 rpm

Clock-wise Rotate | Anti-Clock Rotate

Movement

Speed: 1 mm/s

Distance: 1 mm

IWM Calibration | EWM Calibration

Designer / Developer

Thank you !