STER
WELDING
MONITOR

STERWeld monitor
STERWeld configurator

March 2013.

STERWeld monitoring system

System configuration:

- **STERWeld measurement unit:**
  robust, lightweight, battery operated, portable instrument for monitoring up to 4 independent arcs
- **STER Quad printing unit:**
  four battery operated 57 mm dot matrix printers in a Peli case
- **STERWeld Configuration tool:**
  printout configuration, archiving and analysis of stored welding records

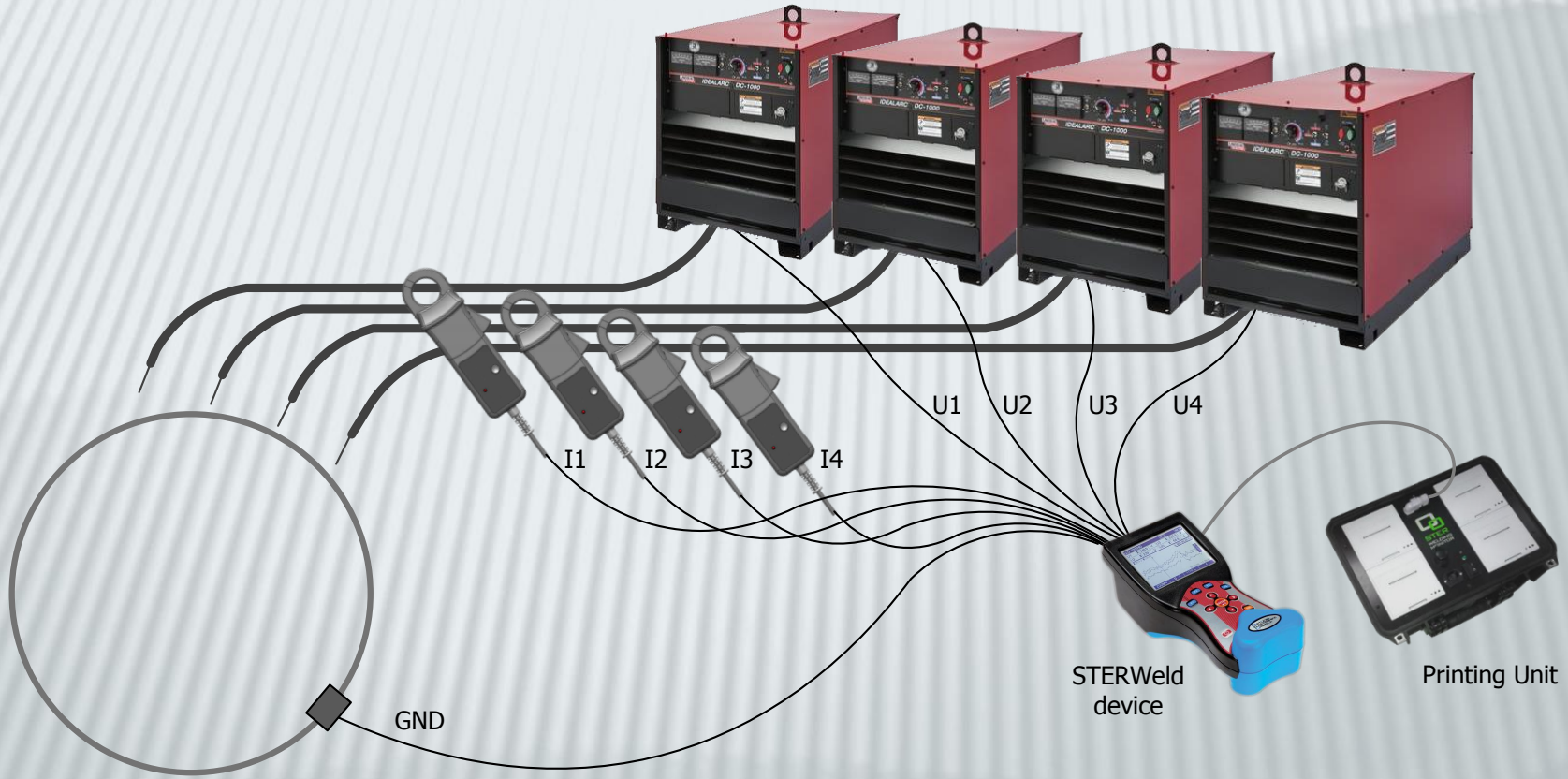
STERWeld measurement unit

- **Specifications:**
  - inputs: 4 voltages and 4 currents
  - graphical user interface
    - measurement mode selection
    - ticket printing configuration
    - printing and record browsing from memory
  - communication ports: RS232, USB
  - battery autonomy: > 8 h
  - power supply: 80-250V, 50/60 Hz

STERWeld operation modes

- **normal mode:** monitoring of 4 welding torches with common ground potential
- **differential mode:** monitoring of 2 welding torches with isolated (or weakly coupled) grounds
- **pulse monitoring:** statistical evaluation of 1 welding torch working in pulse welding

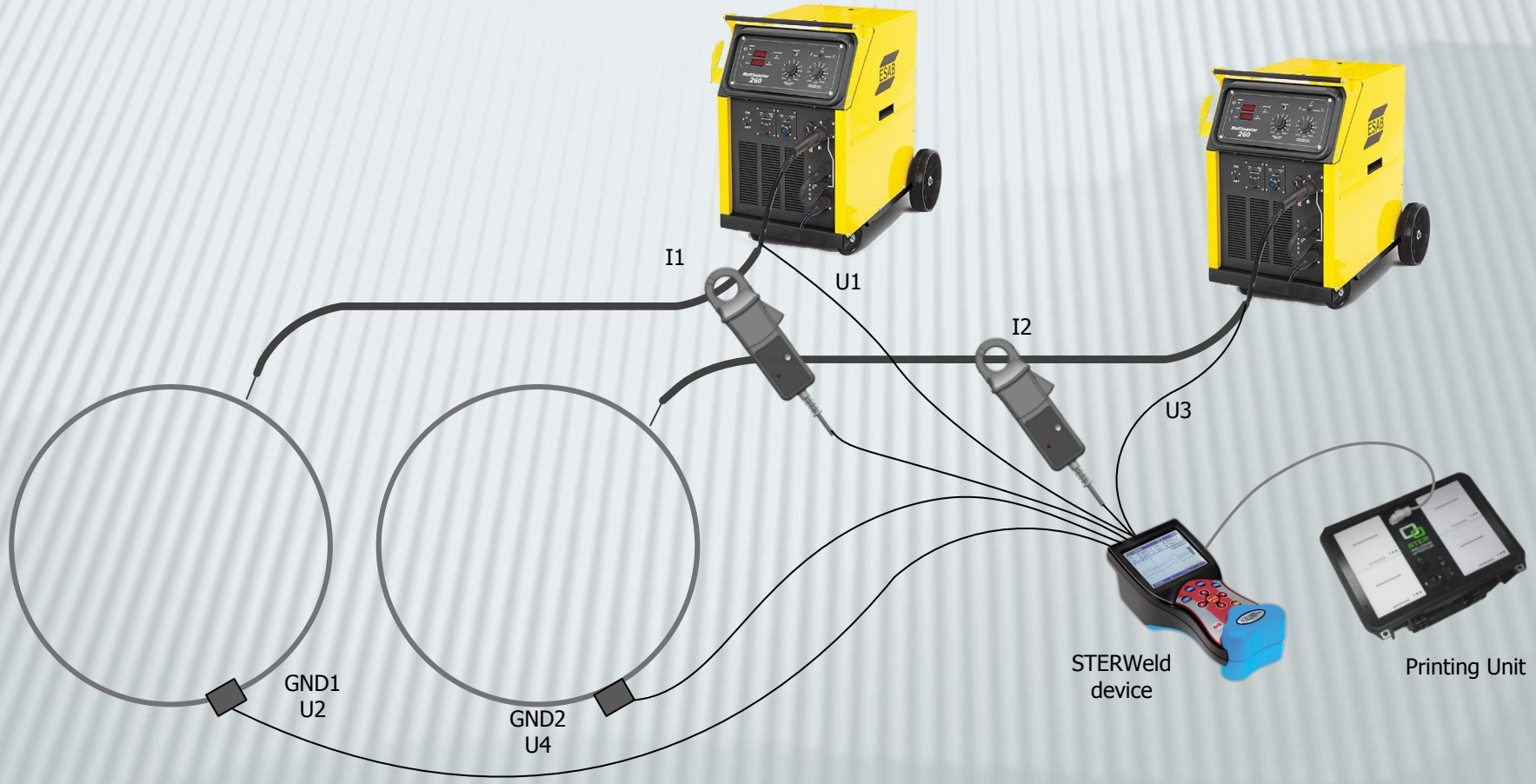
Normal operation mode



Normal operation mode

- **Specifications:**
  - sampling rate 25.6 kHz on each channel
  - mean and effective values for 4 currents and 4 voltages
  - instantaneous power and energy calculation on 4 U-I pairs according to ASME-IX 2010 QW-409.1(c)(1) and nonmandatory app. H
  - arc status & timing is performed at 0.01 s resolution

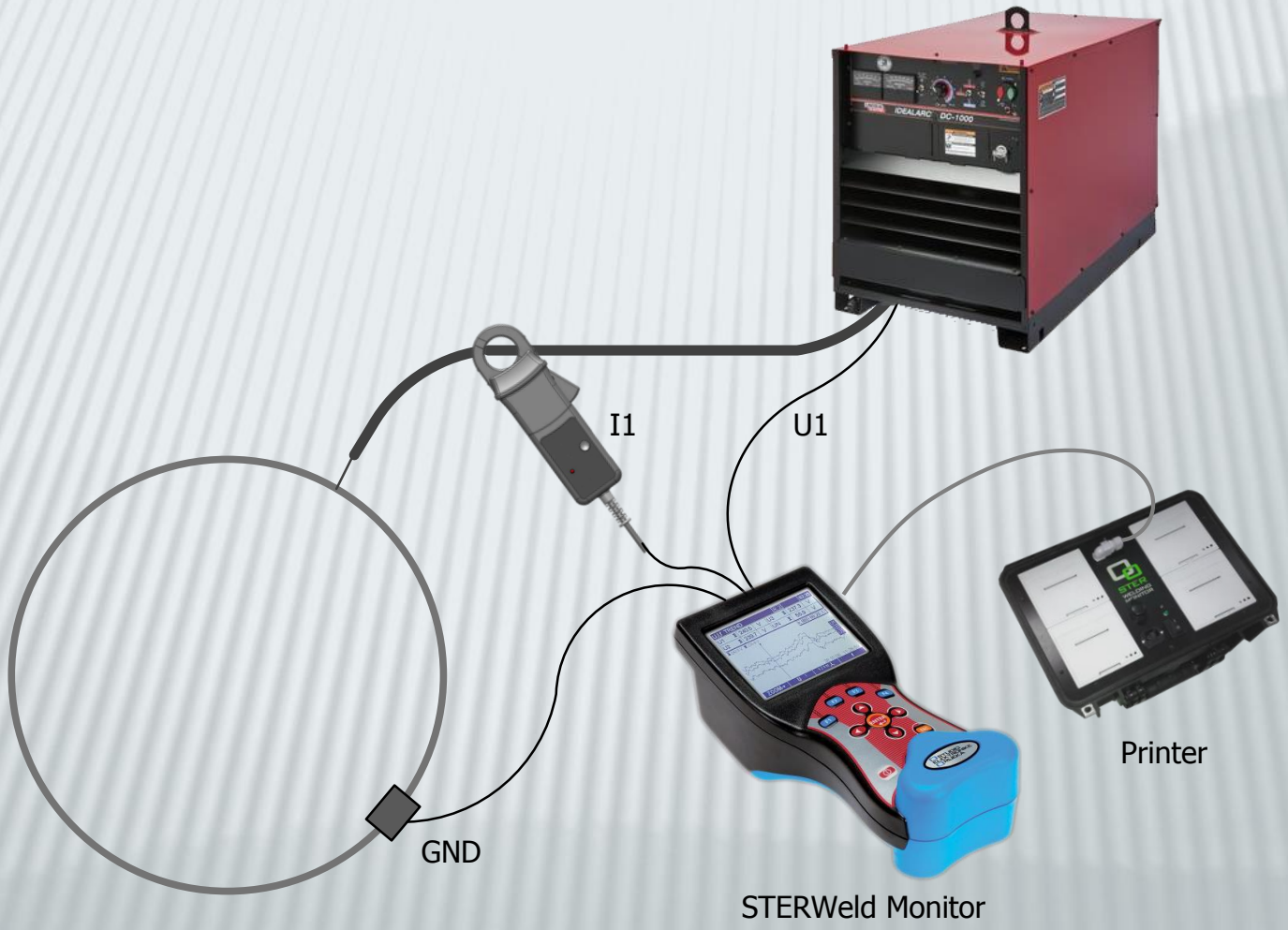
Differential operation mode



Differential operation mode

- **Specifications:**
  - same as Normal mode, except:
  - differential measurement of welding voltage:
    - voltage difference between U1 and U2 inputs defines torch #1 voltage
    - voltage difference between U3 and U4 inputs defines torch #2 voltage
  - potential difference between two “grounds” - up to 150V AC/DC

Pulse operation mode



Pulse operation mode

- **Specifications:**
  - sampling rate: 100 kHz at U1 & I1
  - arc detection/timing: 0.01 ms resolution
  - two pulse phases: peak and base period
  - minimum length of pulse phase 1 ms
  - maximum cycle frequency 250 Hz
  - independent arc evaluation cycle by cycle for peak and base phases

Pulse operation mode

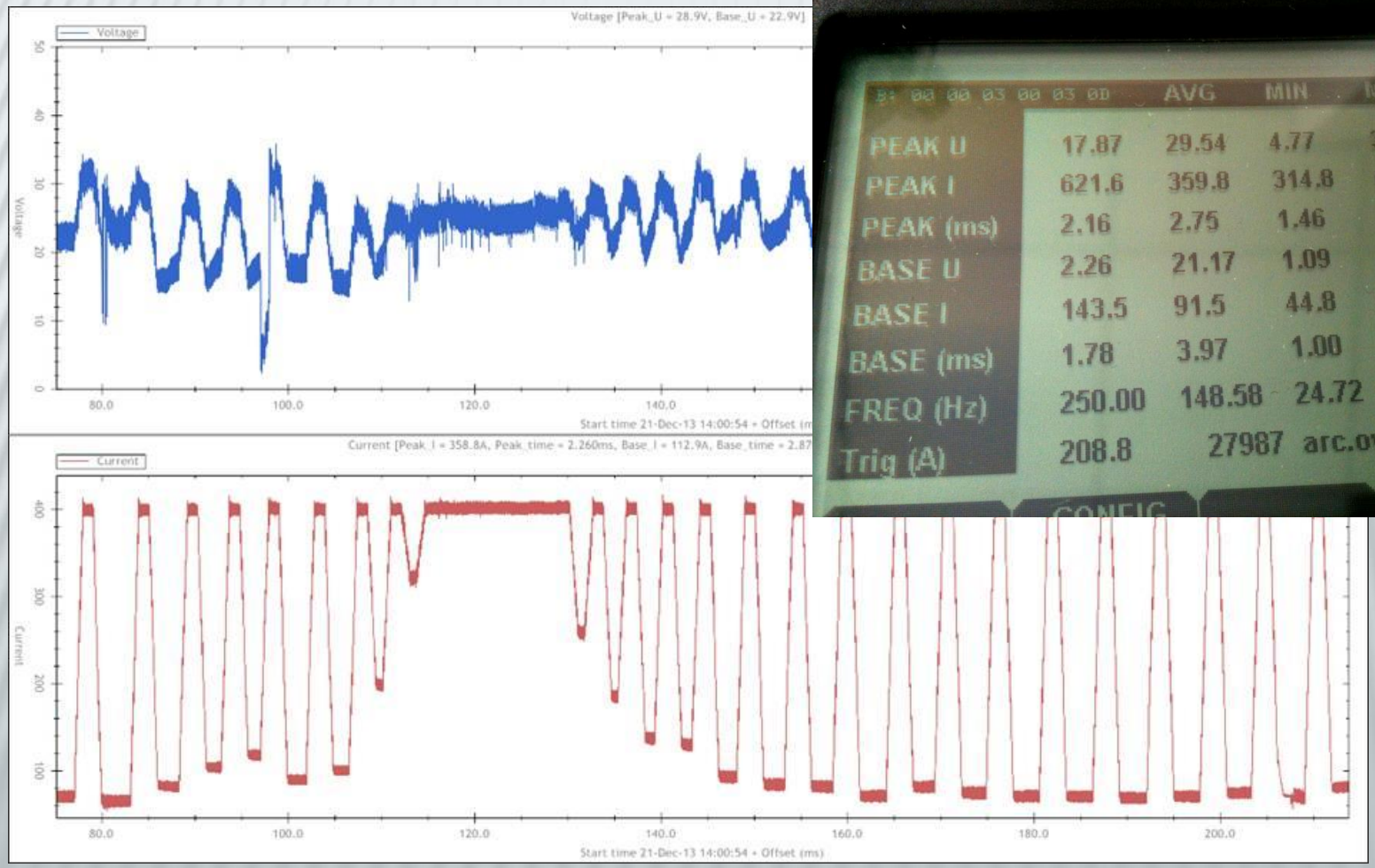
- **Specifications (cont.):**
  - min-avg-max statistics for:
    - peak pulse current – RMS calculation
    - peak pulse voltage – RMS calculation
    - peak pulse time
    - base pulse current – RMS calculation
    - base pulse voltage – RMS calculation
    - base pulse time
    - cycle time

Pulse operation mode

- **Specifications (cont.):**
  - pause/save function
    - oscillogram snapshot records
    - selectable length form 5 ms to 1.8 s
  - browsing of recorded oscillograms
    - on STERWeld unit
    - after download with STER Configurator

Pulse operation mode

- Specifications (cont.):

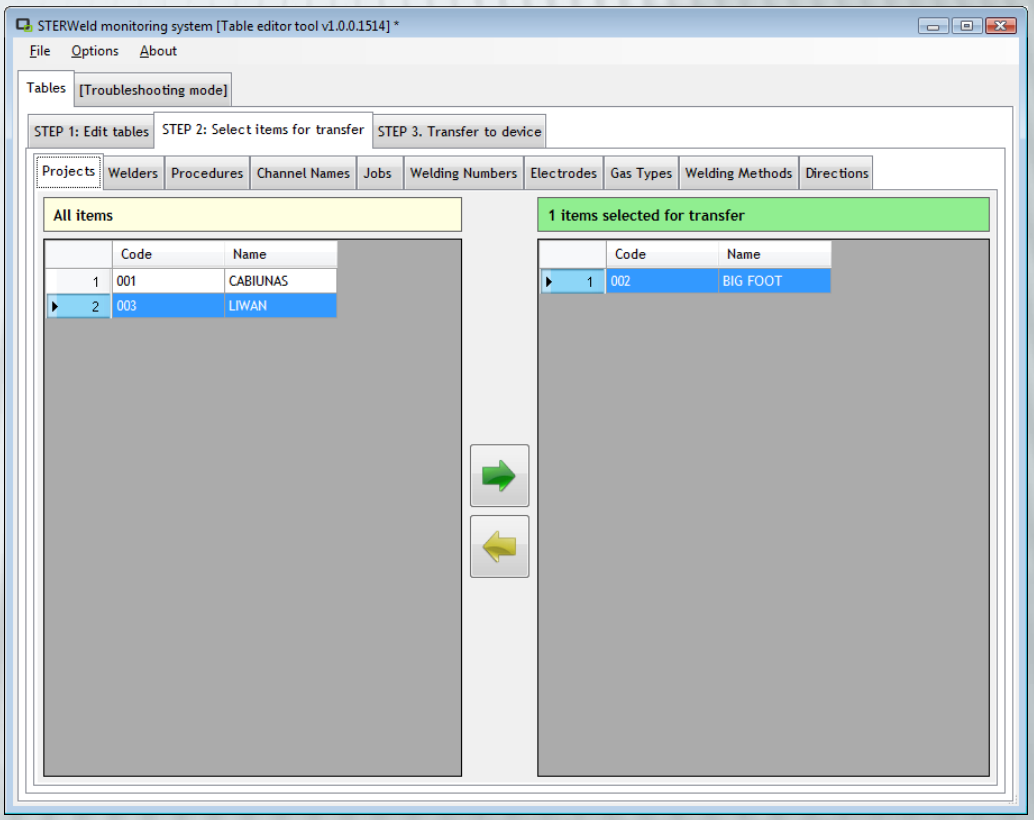


Printing unit

- **STER quad printing unit**
  - microprocessor unit for printing demultiplex 1 to 4
  - 4 dot matrix printers, 57 mm tape
  - battery back-up
  - power supply for STER Welding Monitor
  - potential upgrade: Ethernet connection to SWS

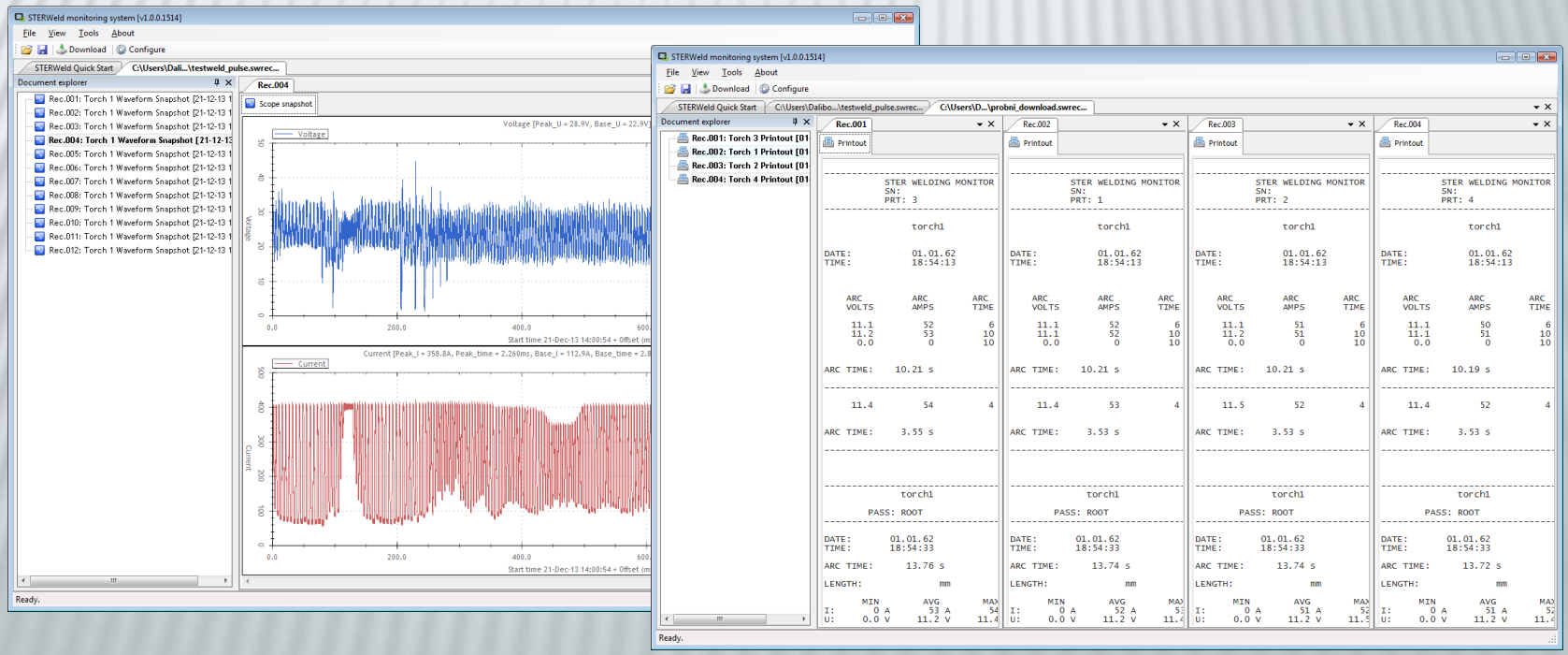
STERWeld configuration tool

- **Windows application for (I)**
  - print configuration
    - projects,
    - welders,
    - procedures,
    - channel names,
    - jobs,
    - welding numbers,
    - electrodes,
    - welding numbers,
    - direction



STERWeld configuration tool

- **Windows application for (II)**
  - recorded data download
    - + archiving, analysis and export



STERWeld configuration tool

- Software and manuals available for download
  www.sterweld.com

STERWeld simulator

- **PC simulation tool**
  - virtual STERWeld instrument
  - development and presentation platform
  - connection to STERWeld Configurator

- contact us for inquiry about the simulator

Contact

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Questions?

Thank you.