WELDCUBE

THE SOFTWARE SOLUTIONS PORTFOLIO FROM FRONIUS
FOR WELDING DATA MANAGEMENT

IN THE SMART FACTORY OF
TOMORROW, THE AIM IS TO ACHIEVE
PRODUCTION PROCESSES THAT ARE
FASTER, MORE FLEXIBLE, AND MORE
POWERFUL, WITH THE CAPACITY FOR
SEAMLESS INTEGRATION.

Welding data must therefore be subject to
complete recording, documentation, and analysis
in the field of welding technology, but data also
need to be made available for other systems in
the production environment.

Fronius offers a number of software solutions in
the area of data management, which make it
easier for the user to handle the wealth of data.

What's your
welding challenge?
└── Let's get connected.

WELDING PRODUCTION
AT A GLANCE.
ANY TIME. ANYWHERE.

THE SOFTWARE SOLUTIONS FROM FRONIUS...

SAVE TIME AND MONEY

/ Automated documentation without handwritten notes
/ Analysis at the push of a button
/ Reduced administrative workload

ENSURE SAFETY IN PRODUCTION

/ Traceability at component and seam level
/ Full documentation of welding data
/ Minimization of risk of error
/ Central administration of user authorizations for Fronius welding systems and software products

INCREASE PRODUCTIVITY

/ Identify potential for optimization
/ Continuous weld-seam monitoring
/ All system status data at a glance

WeldCube
DATA MANAGEMENT

Fronius offers the optimal software solution for the ongoing planning, collection, analysis, and visualization of welding technology production data in the form of the WeldCube product portfolio.

Depending on the WeldCube version, welding and system data can be stored and evaluated either locally in the welding systems or centrally in a database.
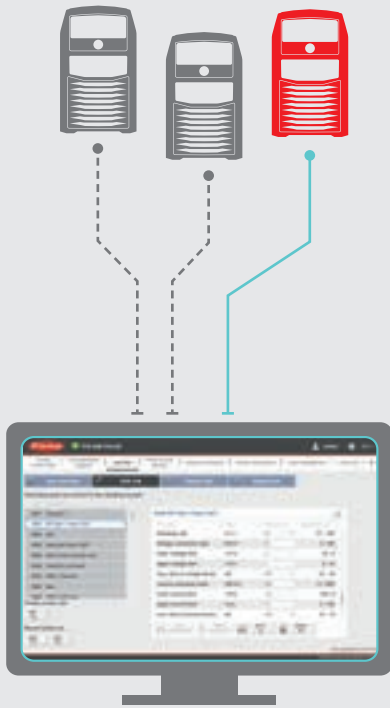
LOCAL
DOCUMENTATION
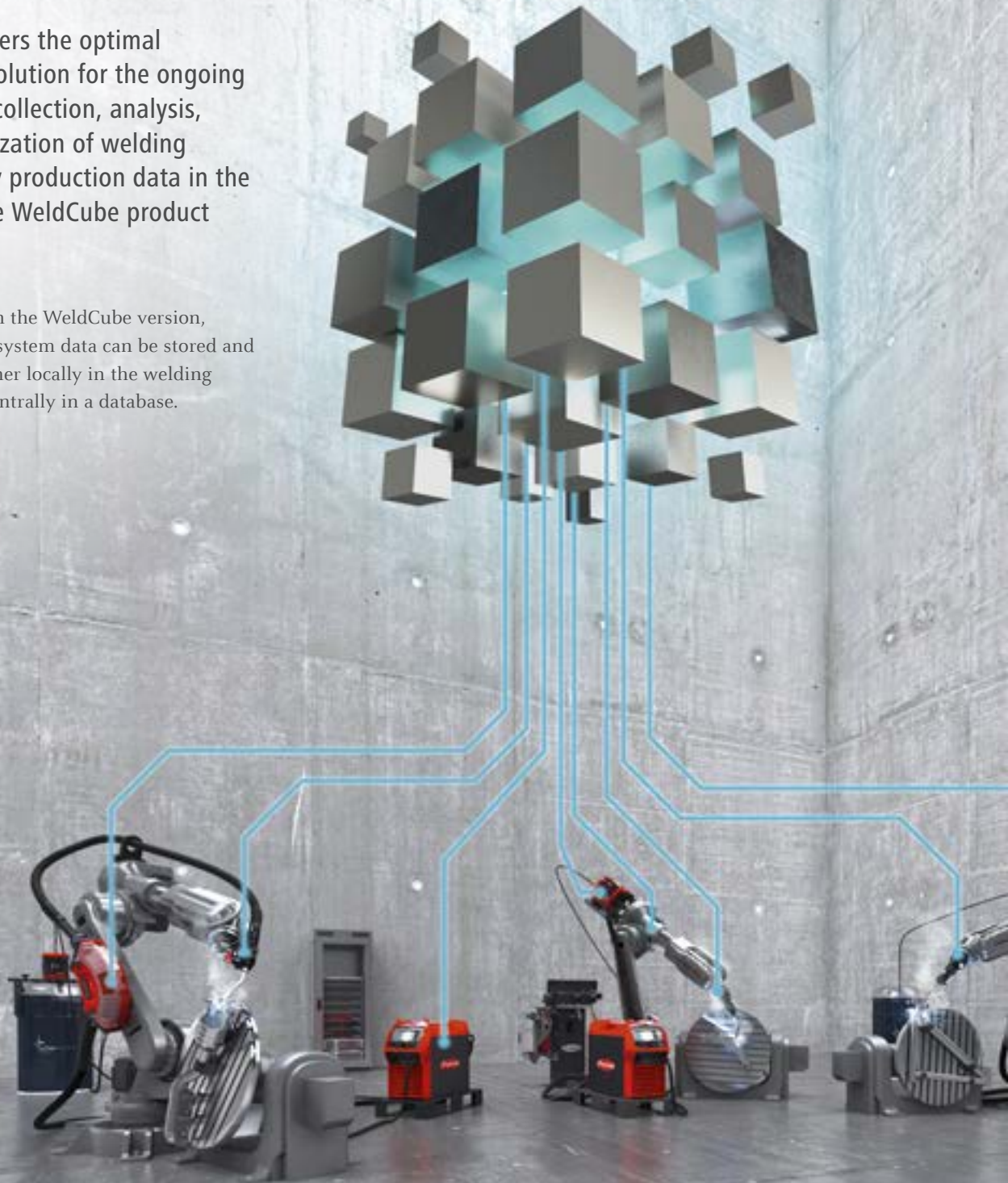
CENTRALIZED
DOCUMENTATION
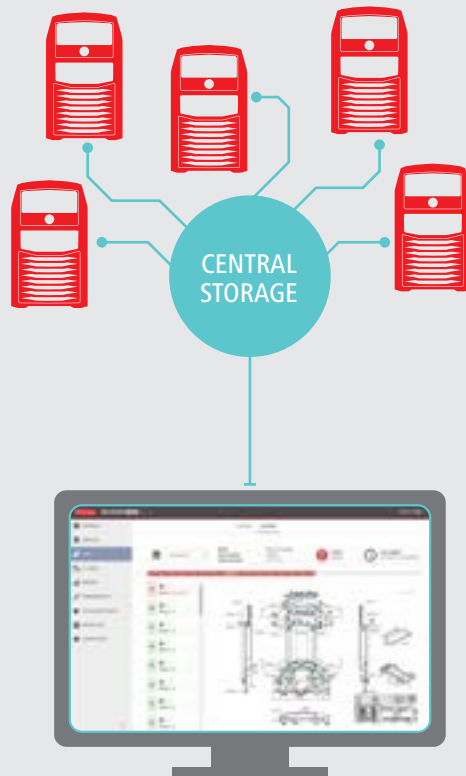
WeldCube Basic

WeldCube Light

3 VERSIONS
for differing customer requirements

WeldCube Premium

CENTRAL STORAGE

/ Data storage directly in the welding system
/ Data viewed and processed for each welding system

/ All data stored in the central database
/ Data collection for all interlinked systems

WeldCube `Light`

MINIMAL LOCAL DOCUMENTATION
STANDARD FOR TPS/i WELDING SYSTEMS*
AT NO ADDITIONAL COST

Mean values for every weld seam are stored directly in the welding system, which can then be separately visualized online for each TPS/i and exported as a PDF file.

*/ except for TPS 270i

ALL PARAMETERS for the selected job

JOB COMPARISONS: Differences marked in red

Refine results using
TIME FILTER

AVERAGE VALUES RECORDED FOR EACH WELD SEAM: time,
duration, current, voltage, wire speed, power

PDF export

Data also available on the
display of the welding system

THE ADVANTAGES OF
WeldCube Light

/ Supports EN 1090-compliant
documentation

/ Option to create free documentation

/ Immediate documentation without
requirement for additional software
integration

WeldCube `Basic`

EXTENDED LOCAL DATA DOCUMENTATION
WITH CONFIGURABLE RANGE OF FUNCTIONS

For users who need limit monitoring or editing functions for set values and actual values recorded at a sampling rate of up to 100 ms alongside the mean values, WeldCube Basic is the answer. This variant also records data directly in the welding system and visualizes them online for each TPS/i. Furthermore, the data is available as both a PDF and a CSV export.

HELPS TO MAINTAIN PROCESS STABILITY:

Limit violations are documented and highlighted

The IMPORT/EXPORT FUNCTION makes it easy
to transfer jobs to other systems

Jobs can be created and
processed easily from the PC
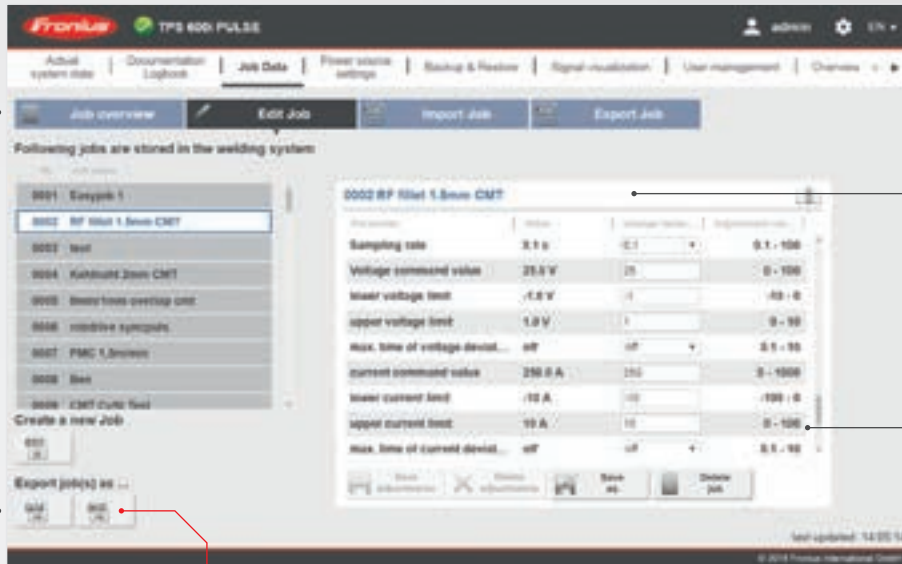
PDF and CSV export

Define limit values

Welding jobs can be exported based
on the selected sampling rate
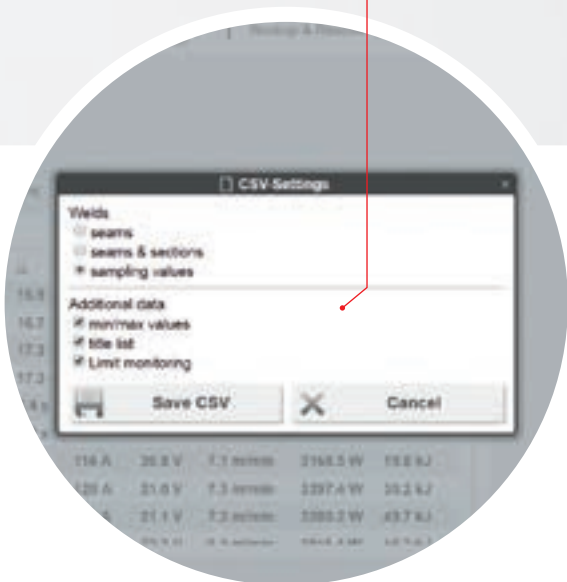
THE ADVANTAGES OF
WeldCube Basic

/ Variable range of functions: options
for job management, actual-value
documentation, and limit monitoring

/ Ideal solution for smaller companies with
few welding systems

/ Transparency and traceability at seam
level

/ Can be upgraded at any time

WeldCube Premium

CENTRALIZED DOCUMENTATION SOLUTION
WITH INTELLIGENT MANAGEMENT, STATISTICAL, AND ANALYSIS FUNCTIONS, AS WELL AS GRAPHICAL VISUALIZATION OF RESULTS

THE RIGHT INFORMATION AT THE PUSH OF A BUTTON

Statistics based on all documented data can be created using intelligent filters, integrated into the dashboard, shared and made available via e-mail reporting

CENTRALIZED & NETWORKED / Significantly reduced time and effort required for documentation and administration thanks to centralized storage of the data in a database.

TRACEABILITY / Targeted documentation and process optimization via the component-specific collection of welding data.

FLEXIBILITY / Forwarding of data to third-party systems via an integrated data interface (web API).

COMPATIBILITY / In addition to the new Fronius welding systems, older series can also be used with WeldCube Premium.

USER-FRIENDLINESS / Straightforward graphical visualization of all recorded data for quick and easy analysis. This makes it possible to quickly detect errors that develop on components over the course of several welding processes.
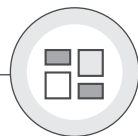
COMPACT
AND INFORMATIVE:

Compile the dashboard to your individual requirements and display only the most important information

COMPONENT INFORMATION
for continuous traceability*

* Prerequisite: traceability and component identification processes are
already implemented at the customer's premises and are compatible
with Fronius systems.
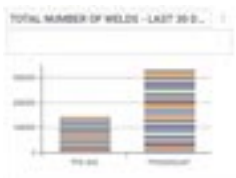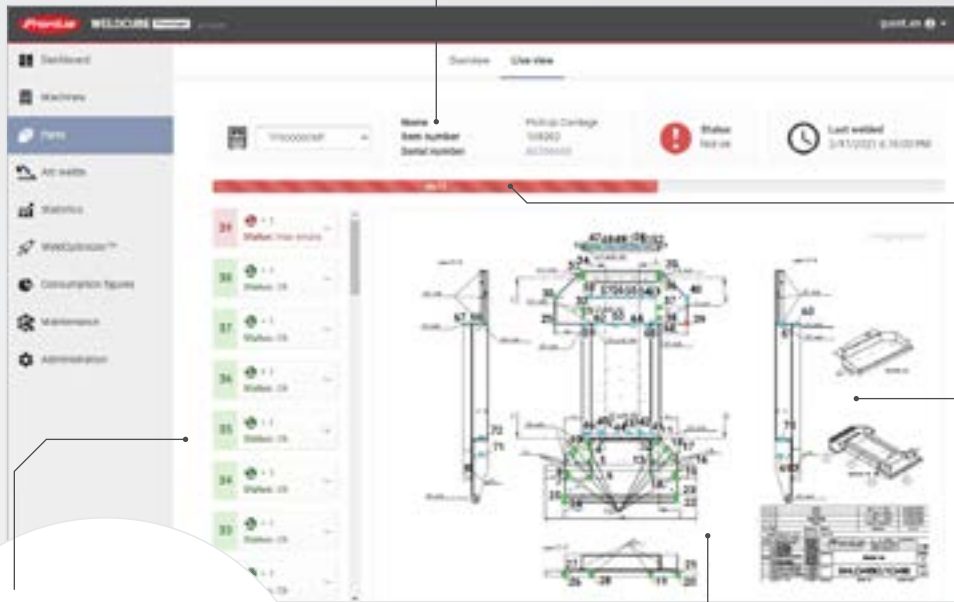
PDF report on
each component

STATUS DISPLAY
for component progress

CONFIGURATION MODULE
for individual definition
of components

DETAILS on every weld
seam directly accessible

Target and actual values
as well as limit violations
and consumption data
are documented and
prepared for each seam
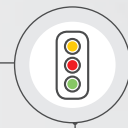
TRAFFIC LIGHT SYSTEM
FOR EACH WELD SEAM

- Yellow = Not yet welded
- Red = Unstable welding process
  (limit violation)
- Green = Stable welding process
  (no limit violation)

CENTRALIZED JOB MANAGEMENT
Changes to the welding process during series production
are tracked and documented for improved traceability.

HISTORY FOR JOB 1

Changes are highlighted

Reset changes quickly
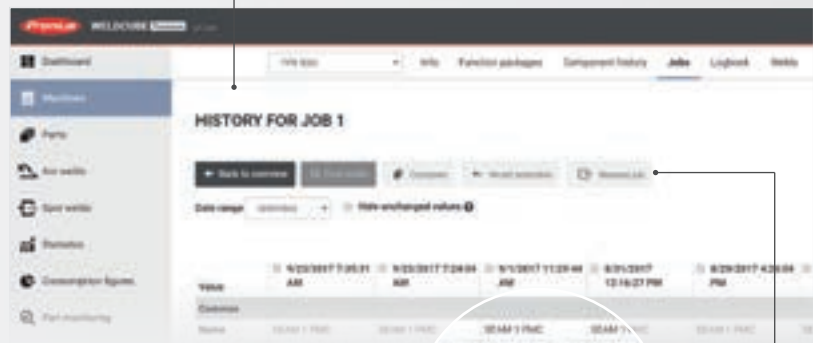
THE ADVANTAGES OF
WeldCube Premium

/ Traceability

/ Centralized documentation
with automated reports and
statistical functions

/ Time and cost savings

Experience WeldCube Premium's full range of
functions right now in the live demo at
www.weldcube.com

OVERVIEW OF RANGE OF FUNCTIONS

WeldCube

DATA STORAGE	Light	Basic	Premium
Locally in the welding system	■	■	
Centralized database			■

PERSONALIZED DASHBOARD			
Editable dashboard			■

STATISTICS AND ANALYSIS			
Creation of statistics			■

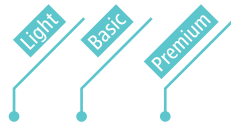| DEVICE OVERVIEW AND MACHINE DETAILS			
System component overview	■	■	■
System component history			■
Location overview incl. status			■
Automatic machine back-up (settings, jobs, users, etc.)	■	■	
Restoration of system settings (settings, jobs, users, etc.)	■	■	

SET VALUES/JOB MANAGEMENT			
Show jobs	■	■	■
Edit jobs		■	■
Create jobs		■	■
Delete jobs		■	■
Compare jobs	■	■	
PDF export of job data	■	■	
CSV export of job data		■	
XML export and import of jobs		■	
Centralized job management (display, create, edit, copy, limit calculation)			■
Job history			■
Automatic back-up of jobs	■	■	■
Restoration of jobs	■	■	■
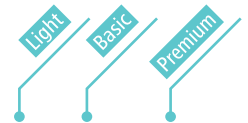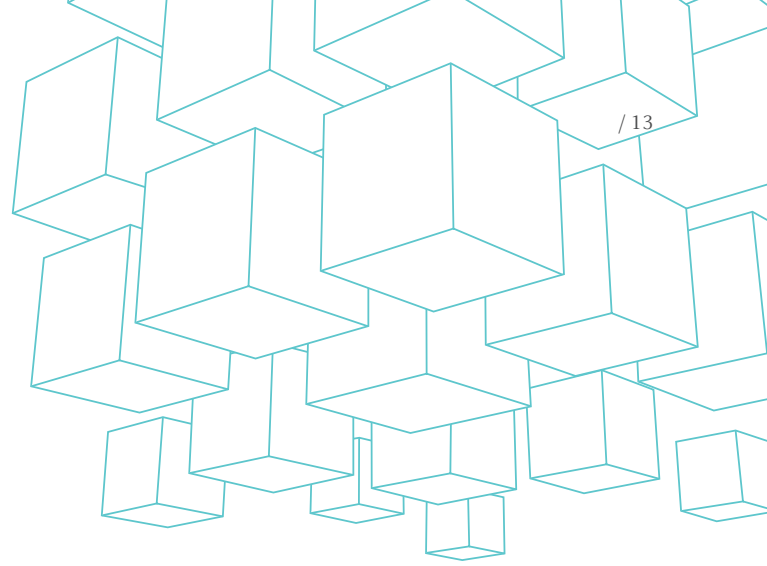
WELDING DATA DOCUMENTATION AND MONITORING	Light	Basic	Premium
Average values per weld seam (U, I, Vd)	■	■	■
Data sampling rate (up to 100 ms)		■	■
Time per weld seam	■	■	■
Welders per weld seam			■
Export of weld seam data (PDF)	■	■	■
Export of weld seam data (CSV)		■	■
Export of weld seam data (JSON, XML)			■
Visualization of seams in diagrams			■
Limit function (I, U, Vd) – Define limits and reactions		■	■
Documentation and visualization of limit violations		■	■
Automatic calculation of limits			■
Welding status after visual inspection / change rework			■

COMPONENT MANAGEMENT			
Component documentation			■
Component administration			■
Component monitoring			■
Export of component reports (PDF)			■
Display of gas and wire costs per component			■
Limit information in component documentation and reports			■
Component status after visual inspection / change rework			■

Light : *SmartManager for the power source, without OPT/i*   Basic : *WeldCube light + OPT/i packages*   Premium : *Prerequisite: WeldCube BASIC*

Changes at release of TPSi 1.9.0 and WeldCube Premium 2.2

WeldCube API

DATA INTERFACES FOR TPS/i WELDING SYSTEMS AND WELDCUBE PREMIUM

In order that welding data may be documented, analyzed, or made available for other software systems, Fronius offers various data interfaces, known as APIs. The customer can use the data that are made available for their own customized data management solutions.

EXAMPLES OF POSSIBLE APPLICATIONS

DISPLAY

/ The most important data of a welding cell is visualized on a screen. This gives the user relevant information on all components at a glance.

DATA EXCHANGE

/ Selected data can be transferred to higher-level software systems – for example MES or ERP – in order to obtain a central overview of the entire production process.

DOCUMENTATION AND ANALYSIS

/ The data interfaces offer the possibility to transfer all available information to the customer's own documentation and analysis software. All evaluations, visualizations, and reports can thus be developed and programmed individually by the customer.

SPECIFICATION OF PARAMETERS

/ Pre-programmed jobs and/or set values are selected for a welding task by a higher-level control system in order to avoid incorrect settings (only possible with OPC-UA).

CUSTOMIZED MAINTENANCE SOLUTIONS

/ Customers can implement their own specifications and defined processes for service routines based on their own data analyses. These are displayed on the user's own systems, such as apps or desktop views, to enable internal maintenance to be supported and optimized.

TWO POSSIBLE SOLUTIONS DEPENDING ON CUSTOMER REQUIREMENTS

The way that the various functions of the data interfaces from the WeldCube API portfolio combine enables the fully customizable and flexible integration of Fronius power sources and WeldCube Premium into the system landscape (e.g., MES systems).

TPS/i INTERFACE SOLUTIONS

The interface solutions **OPC-UA*** and **MQTT*** enable raw **current data and actual states** of the welding system to be read out. This makes it possible to transfer data records to third-party systems for independent evaluations, analyses, and visualizations. The welding system parameters can also be set via OPC-UA.

INTERFACE SOLUTION FOR WELDCUBE PREMIUM

The **REST** web interface in WeldCube Premium enables the analysis and transfer of prepared data. In contrast to the interface solutions OPC-UA and MQTT, **historical data** can also be accessed here. In addition, this interface solution provides fixed data packets that include information on components, seams, set values, jobs, and machines.

	MQTT	OPC UA	REST:API
Read live process parameters	■	■	
Write process parameters		■	
Read aggregated, collected, historical data			■
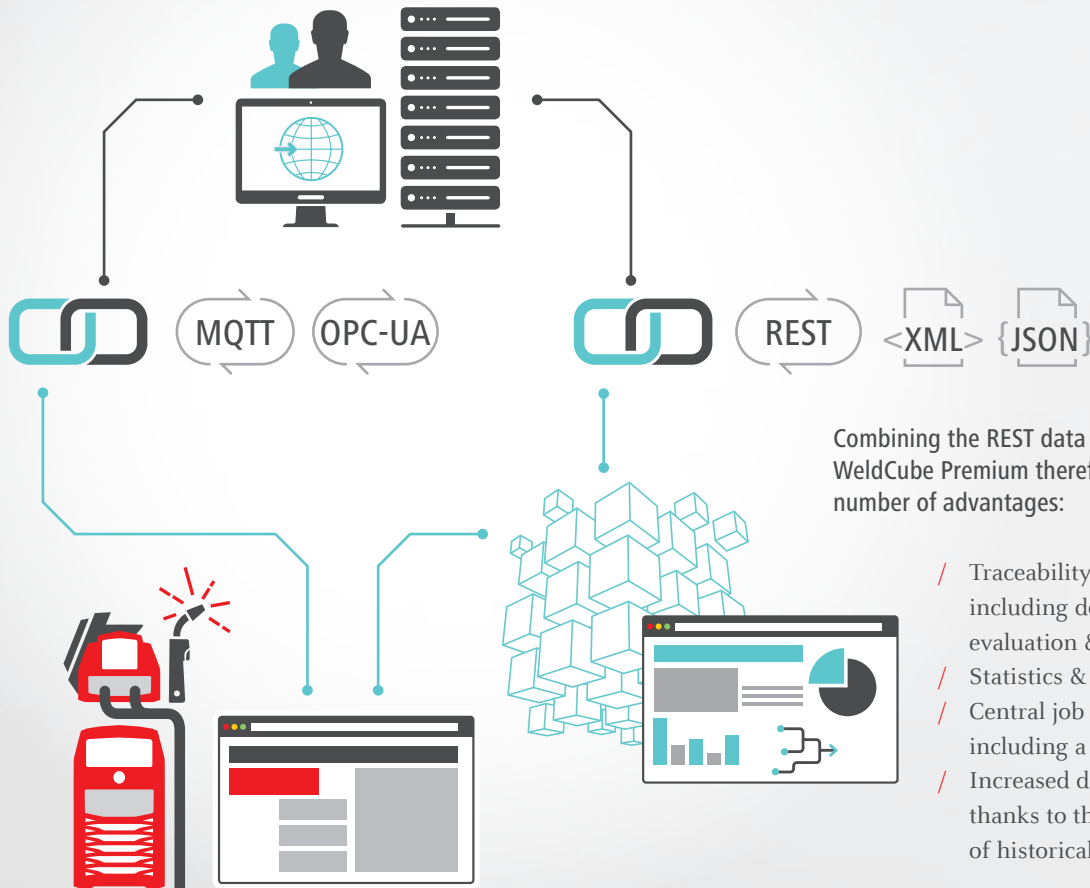
Combining the REST data interface with WeldCube Premium therefore offers a number of advantages:

/ Traceability concept including documentation, evaluation & reporting
/ Statistics & analysis tools
/ Central job management including a history function
/ Increased data security thanks to the synchronization of historical data

* OPC-UA: Open Platform Communications – Unified Architecture   MQTT: Message Queuing – Telemetry Transport

USER MANAGEMENT
IN THE WELDING SYSTEM ITSELF

Authorizations can be assigned to users individually on Fronius welding systems that feature an integrated authorization system.

The system knows what the user is and is not allowed to do when they log in using a key card, key fob, or the WeldConnect app.

Key card

Key fob

Mobile device with WeldConnect

Custom NFC card*

ADVANTAGES OF USER MANAGEMENT:
SECURE CUSTOMIZABLE TRACEABLE

/ Lock and unlock the welding systems with ease

/ Avoid operating errors thanks to the individual assignment of authorizations. Example: only an authorized welder can make changes to a job.

/ Manage authorizations and user roles directly in the welding system

/ Traceability in data documentation; a record is made of users who are logged in

* / In contrast with custom NFC cards, Fronius key cards have extra copy protection for increased security.

CENTRAL USER
MANAGEMENT

Central User Management allows for quick and easy user management. It takes just a few clicks in a single central location to define user rights for one or more welding systems or WeldCube Premium applications – the information is automatically sent to all connected systems.

THE RESULT:
BIG TIME SAVINGS AND TRANSPARENCY.

TIME SAVINGS

/ Time savings of up to 90% for the creation of new users on multiple systems (in comparison to when these are created on the welding system itself)

/ Automatic transfer of user rights changes to welding systems

/ Rapid reassignment of NFC card if lost or for a different employee

CENTRALIZED OVERVIEW

/ All users and their authorizations at a glance

/ Straightforward assignment of user rights on connected welding systems and WeldCube Premium applications

/ Traceability throughout the process of all changes to users

WEB API INTERFACE

/ Ability to connect existing user databases or HR systems

/ Avoid entering data twice

KEEP THE IDEAL WELDING SOLUTION WITH YOU AT ALL TIMES

PROFESSIONAL PARAMETER SEARCH SUPPORT
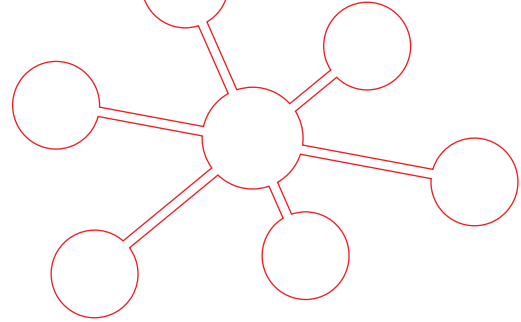
SAVE, EDIT, AND SEND JOB PARAMETERS
TO THE WELDING SYSTEM

WIRELESS TRANSMISSION OF PARAMETERS
AND COMPONENT IDENTIFICATION DATA

SIMPLY RECORD AND SEND THE COMPONENT ID
TO THE WELDING SYSTEM
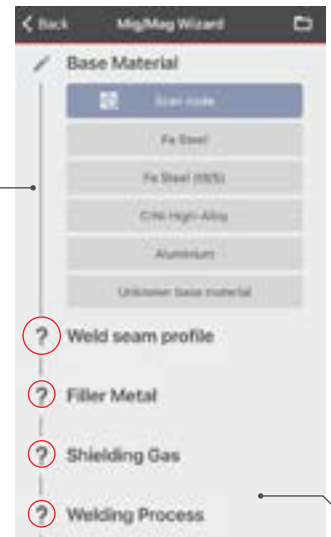
LOCK AND UNLOCK WELDING SYSTEMS
WITH EASE

WELDCONNECT

THE FRONIUS APP FOR WIRELESS INTERACTION WITH THE WELDING SYSTEM

WIZARD FOR MIG/MAG AND TIG

/ Automatic, task-based determination of the appropriate welding parameters

JOB MANAGER

/ The connected welding system can call up, edit, and store jobs.
/ Jobs can be transferred from the mobile device to a connected welding system.
/ Jobs can be shared with colleagues
/ All jobs are always available to registered users on each of their mobile devices.

SYSTEMS INFORMATION

/ It is possible to retrieve relevant information about the welding system such as the serial number, IP address, status, software version, etc.
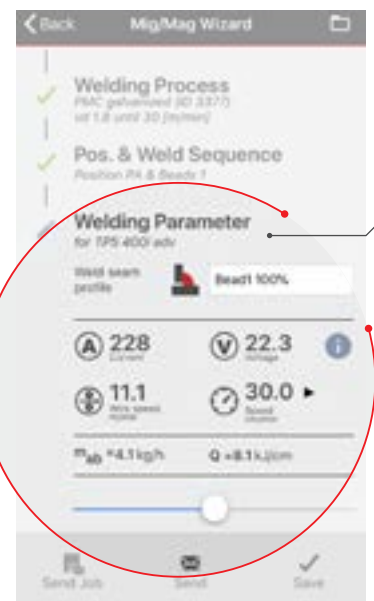
LOCK AND UNLOCK

/ The user can log in to and out of the welding system without an NFC card.

COMPONENT IDENTIFICATION

/ Component information can be scanned and transferred to the welding system, and set component information can be read out from the welding system.

AVAILABLE IN 20 LANGUAGES DOWNLOAD NOW!

JETZT BEI Google Play

Laden im App Store

SERVICES

In addition to the software solutions, Fronius offers support before, during, and after purchase – be it on site at the customer's premises or in the form of flexible, and cost-effective remote assistance.

DIGITAL SOLUTION
SUPPORT

/ Installation and commissioning of a software solution

/ Training of customer employees

/ Help with traceability issues

/ Help with network issues

/ On-site support in the event of questions or problems

DIGITAL SOLUTION
REMOTE SUPPORT

/ Installation and commissioning of a software solution

/ Training of customer employees

/ Configuration & software repair

/ Support in the event of questions or problems

/ Perfect Welding / Solar Energy / Perfect Charging

THREE BUSINESS UNITS, ONE GOAL: TO SET THE STANDARD THROUGH TECHNOLOGICAL ADVANCEMENT.

What began in 1945 as a one-man operation now sets technological standards in the fields of welding technology, photovoltaics and battery charging. Today, the company has around 5,440 employees worldwide and 1,264 patents for product development show the innovative spirit within the company. Sustainable development means for us to implement environmentally relevant and social aspects equally with economic factors. Our goal has remained constant throughout: to be the innovation leader.

Further information about all Fronius products and our global sales partners and representatives can be found at **www.fronius.com**

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