BONDiNG THE STARS

F&S BONDTEC

TraceX Application Program Interface

Motivation

Traceability is an increasingly important feature in machine construction, and in the industrial area, in general. Traceability means i.a. early detection of production errors, serves as a production proof and generally helps to increase quality.

Concept

The TraceX API is organized around Python (version 3.8.2 32Bit). With the API, F&S BONDTEC bonders (software version 2.7.0 or higher) can implement a fully customizable traceability. The bonder uses custom scripts to create traceability data in virtually all common export formats.

To make creating the script easier, the TraceX API has a "sandbox", based on Visual Studio Code. This way you can test and debug your script, before it is used in a production environment.

TraceX-API:

TraceX-API is a software interface for traceability of F&S BONDTEC Series 58 - machines. An embedded Python script is loaded by the Bondstar software. The code is open and can be adapted to your own requirements. The software calls defined functions of the Python script and reports corresponding events.

The goal is to offer a variety of parameters for analysis. This can be data such as the current status, production data or changes in the program. This information can be particularly helpful for optimizing production processes and finding problems in the production line more quickly.

Figure 1 - Visualization using Tableau (Wire Process Time)

Figure 2 – Visualization using Tableau (Deformation)

Features

The bonder triggers methods via script to log events; these can be used for analysis by process owners, quality managers and other people involved in the process. The following results can be transferred:

- Machine status
- Error output with parameters for error analysis
- Result adjustment: chip heights, coordinates, adjustment time, etc.
- History of bond program changes:
  - Global settings
  - Wire/Bond/Loop parameters
  - Bond program parameters
- Bond results:
  - Maximum deformation of bond
  - Number of wedges of the current head
  - Deformation values
  - Lower & upper specification limit of the deformation
  - Touchdown position found
  - Difference between expected & found touchdown position
  - Chip number
  - Bond number
  - Bond time
  - US power
  - Bond forces
  - Burst US-Power (only if "use_burst" is True.)
  - Burst time (only if "use_burst" is True.)

Visualization

The data is put into a defined backend (e.g. PostgreSQL). From there, the data can be transformed in user-friendly visualizations. In Figure 1 and Figure 2 you can see a visualization using **Tableau**. Due to the universal interface, the data can be put into e.g. Web services, BI tools or even SAP as well.

For a detailed technical description of the individual functions or general questions about the interface, please contact us by phone +43 7722-67052-8270 or via e-mail under info@fsbondtec.at.

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