



Digitising Pre-analytics with S4DX & SARSTEDT



THE NEW STANDARD FOR DIGITAL PRE-ANALYTICS



In recent years, the medical diagnostic laboratory has undergone a comprehensive digitisation process. Now the time has come to digitise pre-analytics. Smart4Diagnostics closes the data gap between sample collection and analysis in the laboratory with the S4DX platform.

Errors can be considerably reduced thanks to the possibility for full digital tracing of pre-analytics processes. At the same time, an individual, digital and fully verifiable sampling process in pre-analytics is created as a new quality standard for diagnostics.

Establish pre-analytical quality monitoring

- Document transport time and temperature
- Monitor sample quality digitally according to ISO 15189
- Link pre-analytical data such as the time of sampling, the verification of the patient and, if necessary, his or her condition to the diagnostic process

Optimise work processes and reduce laboratory costs

- Reduce costs in sample logistics
- Automate sample receipt procedures
- Minimise repeated measurements
- Reduce training outlay for collection sites
- Optimise customer communication

Considerably reduce pre-analytical errors

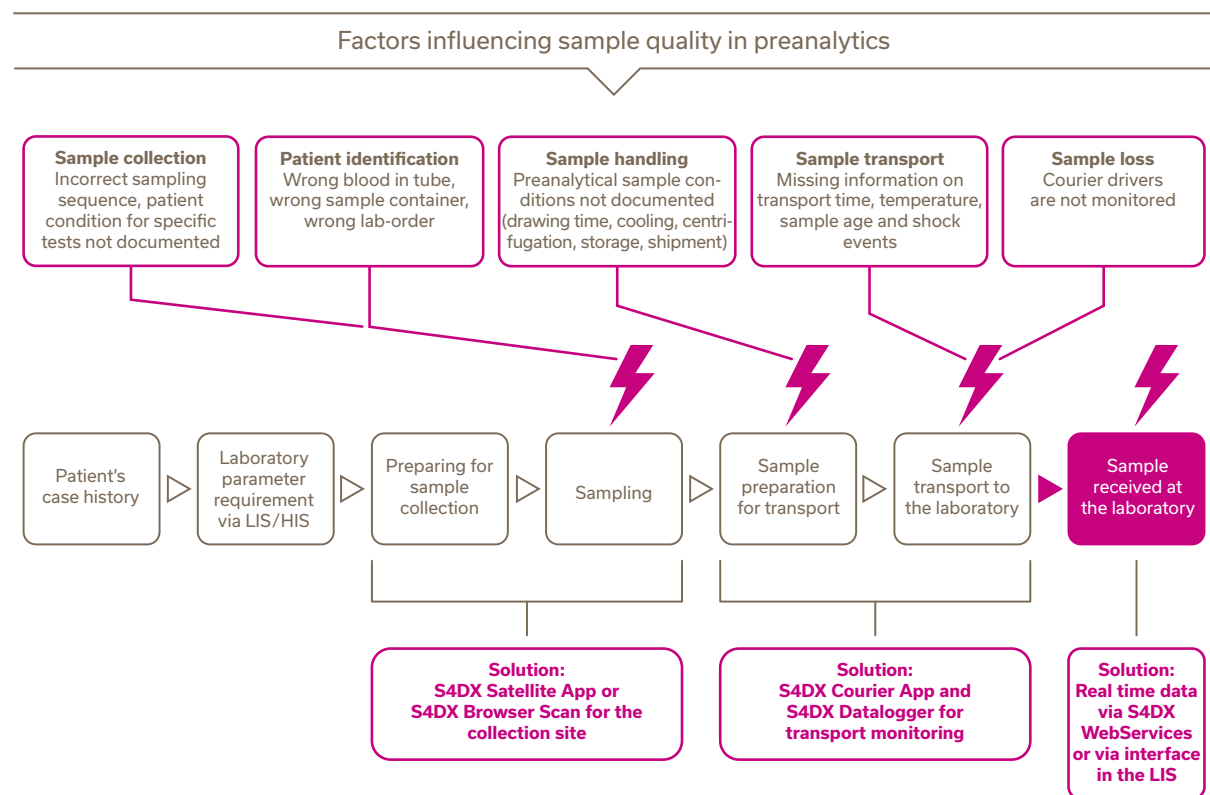
- Avoid errors such as "wrong patient", "wrong blood in tube" and "missing material"

HIGHEST QUALITY EVIDENCE AND REDUCTION IN PRE-ANALYTICAL ERRORS

Up to 75 per cent of all errors in the diagnostic process occur during pre-analytics.¹ Scientific studies have shown that the average cost of each pre-analytical error is around USD 208 and that these errors add up to 1.2 per cent of hospital operating costs.² They also put a strain on hospital and laboratory resources.

The most critical pre-analytical errors include incorrect patient identification, having not enough sample volume, an incorrect or missing material or sample type, and incorrect sample handling.³ In addition, the sample quality, particularly in view of haemolysis rates, is a considerable influencing factor, which can be demonstrably reduced with the right blood sampling system.⁴

Smart4Diagnostics solves the remaining problems via the complete digitisation and automation of quality and process monitoring in pre-analytics – **and it does this without changing the processes themselves or influencing the routine.**



¹ Sonmez, Cigdem et al. Preanalytical Phase Errors: Experience of a Central Laboratory. Cureus Vol. 12,3 e7335. 20/03/2020, DOI:10.7759/cureus.7335.

² Green SF. The cost of poor blood specimen quality and errors in preanalytical processes. Clin Biochem. 2013;46:1175-1179.

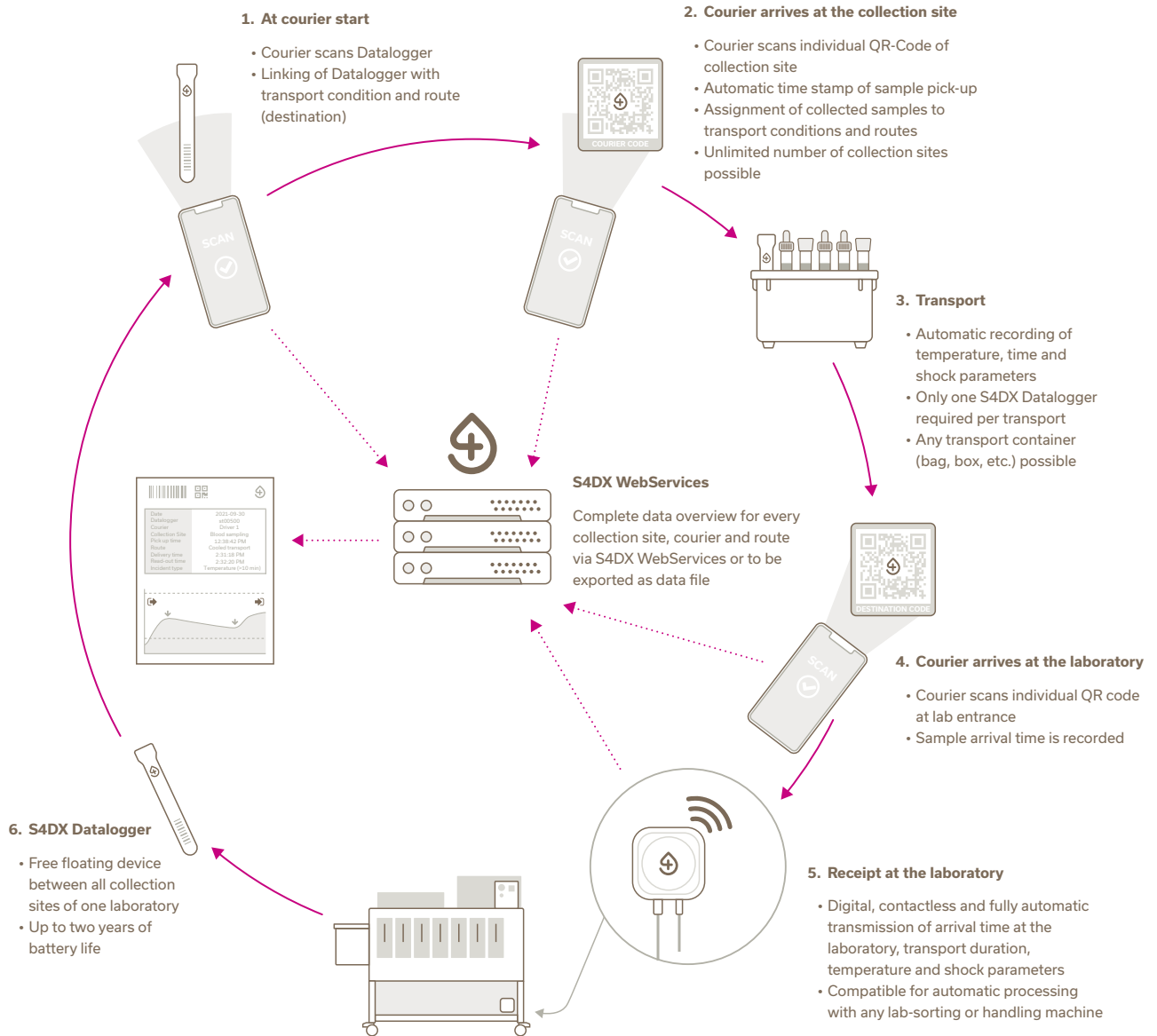
³ Upreti S, Upreti S, Bansal R et al. Types and frequency of preanalytical errors in haematology lab. J Clin Diagn Res. 2013;7(11):2491-2493; Salvagno GL, Lippi G, Bassi A et al. Prevalence and type of pre-analytical problems for inpatients samples in coagulation laboratory. J Eval Clin Pract. 2008;14:351-353.

⁴ Lippi, et al. Prevention of hemolysis in blood samples collected from intravenous catheters. Clin Biochem 2013;46:561-564.

S4DX COURIER APP

DIGITAL TRANSPORT TRACKING

Complete digital transport tracking without the involvement of collection sites and without an interface to the laboratory IT system (LIS), compatible with all common transport containers and methods.



Components of the transport tracking system



S4DX Datalogger for monitoring the sample transport. Recording of transport times, the temperature and vibrations. Data communication via Bluetooth, internal data memory, battery life of around two years at room temperature, can be recycled via Smart4Diagnostics.

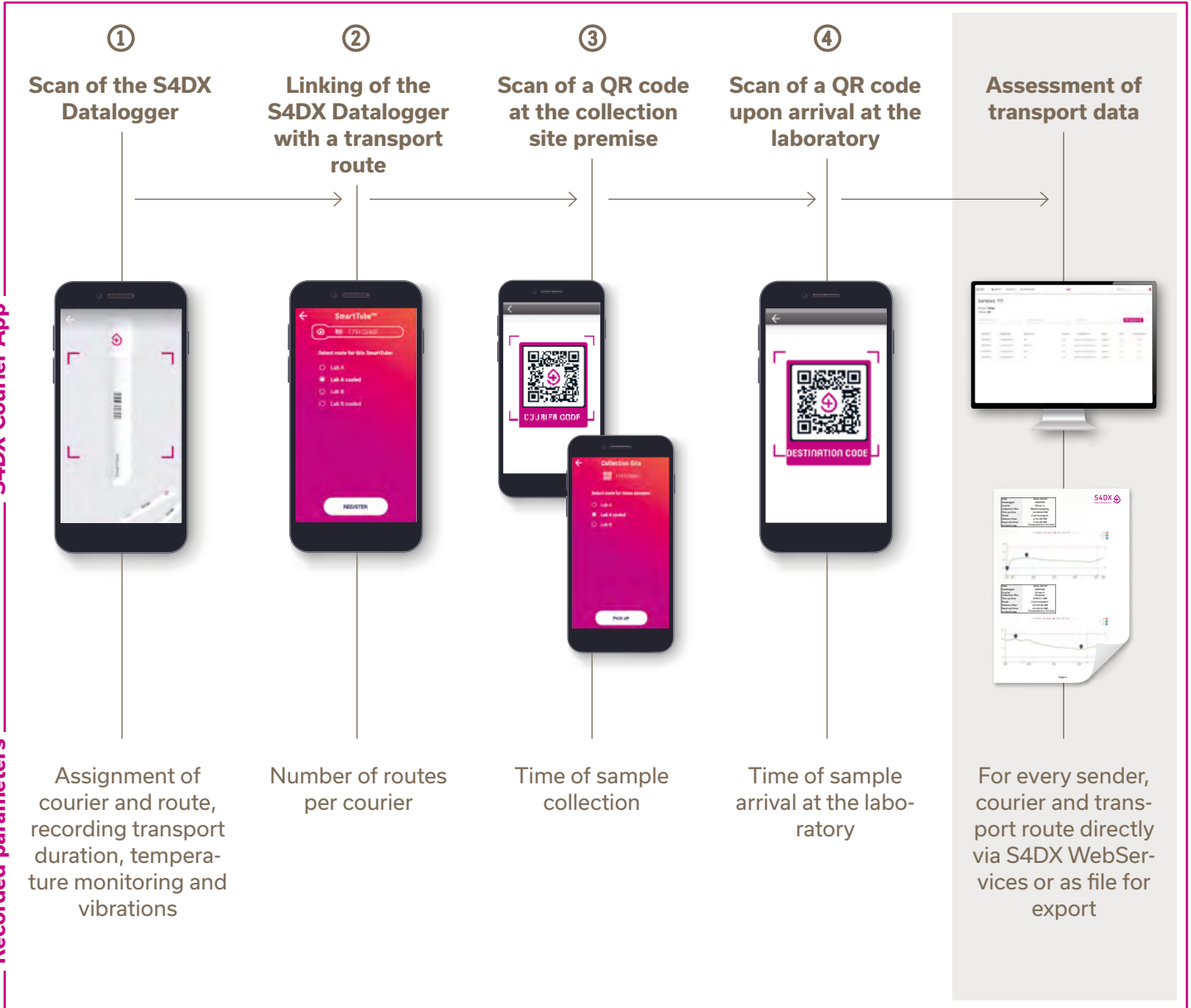


S4DX Courier App for iOS and Android with scan function. A mobile device is required. All common smartphones are supported. Possible functions: Identification of the courier driver, time stamp for sample transport start, for handovers between different couriers and for arrival at the laboratory.



S4DX Courier App

Recorded parameters

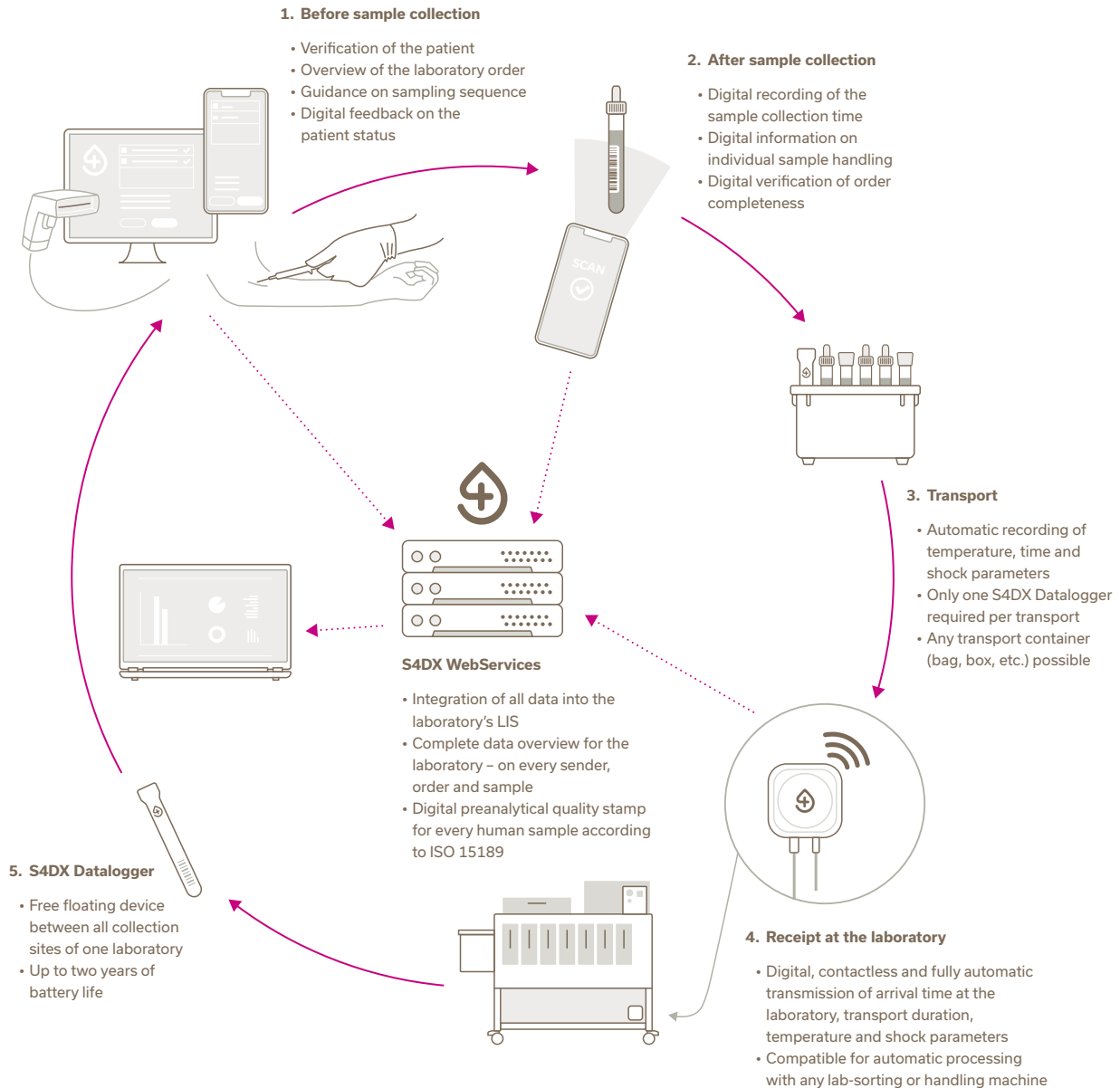


S4DX Lab Gateway enabling contactless data transmission of the S4DX Datalogger to S4DX WebServices. The Bluetooth transponder automatically connects to all S4DX Dataloggers when they arrive. All data is automatically saved on S4DX WebServices.

S4DX SATELLITE APP

DIGITAL PATIENT, ORDER AND SAMPLE VERIFICATION

Complete digitisation of pre-analytics from sample collection until the arrival in the laboratory with fully automatic data transmission into the LIS / HIS – suitable for both clinical use and the private laboratory, as well as for senders with and without "order entry".



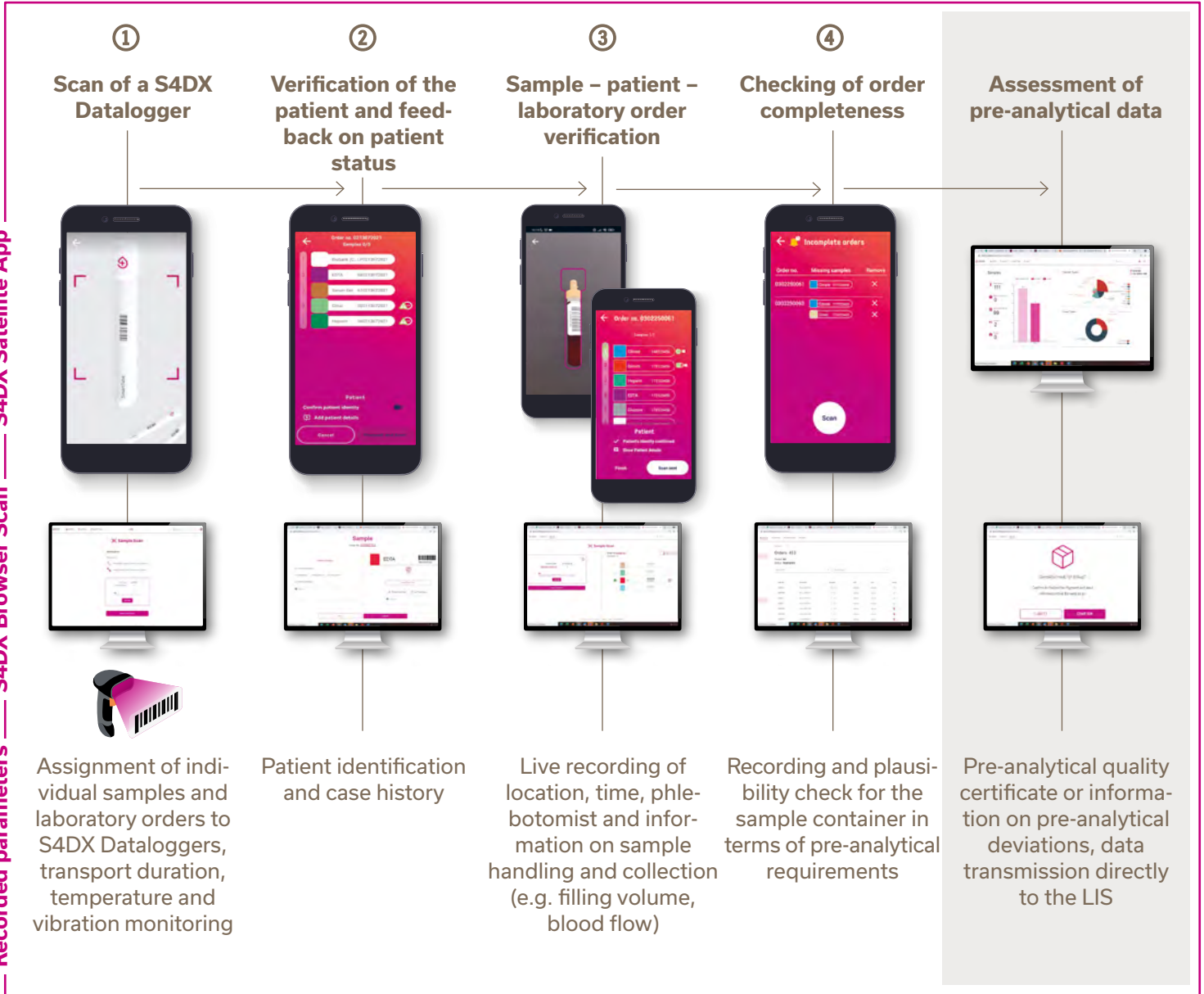
Components for digital patient, order and sample verification



S4DX Satellite App for iOS and Android with scan function for all common smartphones. Possible functions:* Identification and verification of the patient via barcode scan • Information on the patient health status before blood sampling • Information on the sampling sequence and required sample containers • Display of pre-analytical handling and, if necessary, shipping destination • Identification of the sample container and assignment to a patient order • Feedback on sampling events (filling volume, difficult blood flow) • Registration of the sampling time • Feedback on order completeness and, if necessary, on materials still missing.



Recorded parameters — S4DX Browser Scan — S4DX Satellite App



S4DX Browser Scan for use on internet-enabled computer with adjunct barcode scanner. Works with all common web browsers. The same functions as the S4DX Satellite App, can be used as an alternative or in addition.*

S4DX WebServices is the central platform for digital pre-analytics for data exchange with the LIS and for convenient viewing of data.

* Establishing a data interface to the laboratory information system is required.



DIGITAL PRE-ANALYTICS STARTS WITH S4DX & SARSTEDT



We would be happy to provide you with further information.
Contact us at smart4diagnostics.com/contact



Distributed by:
SARSTEDT AG & Co. KG
P.O. Box 1220
51588 Nümbrecht
Germany

Tel.: +49 (0) 2293 305-0
Email: export@sarstedt.com



Smart4Diagnostics GmbH
Rupert-Mayer-Str. 44/bldg 64.15
81379 Munich
Germany

Tel.: +49 (0) 89 72401840
Email: contact@s4dx.com



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