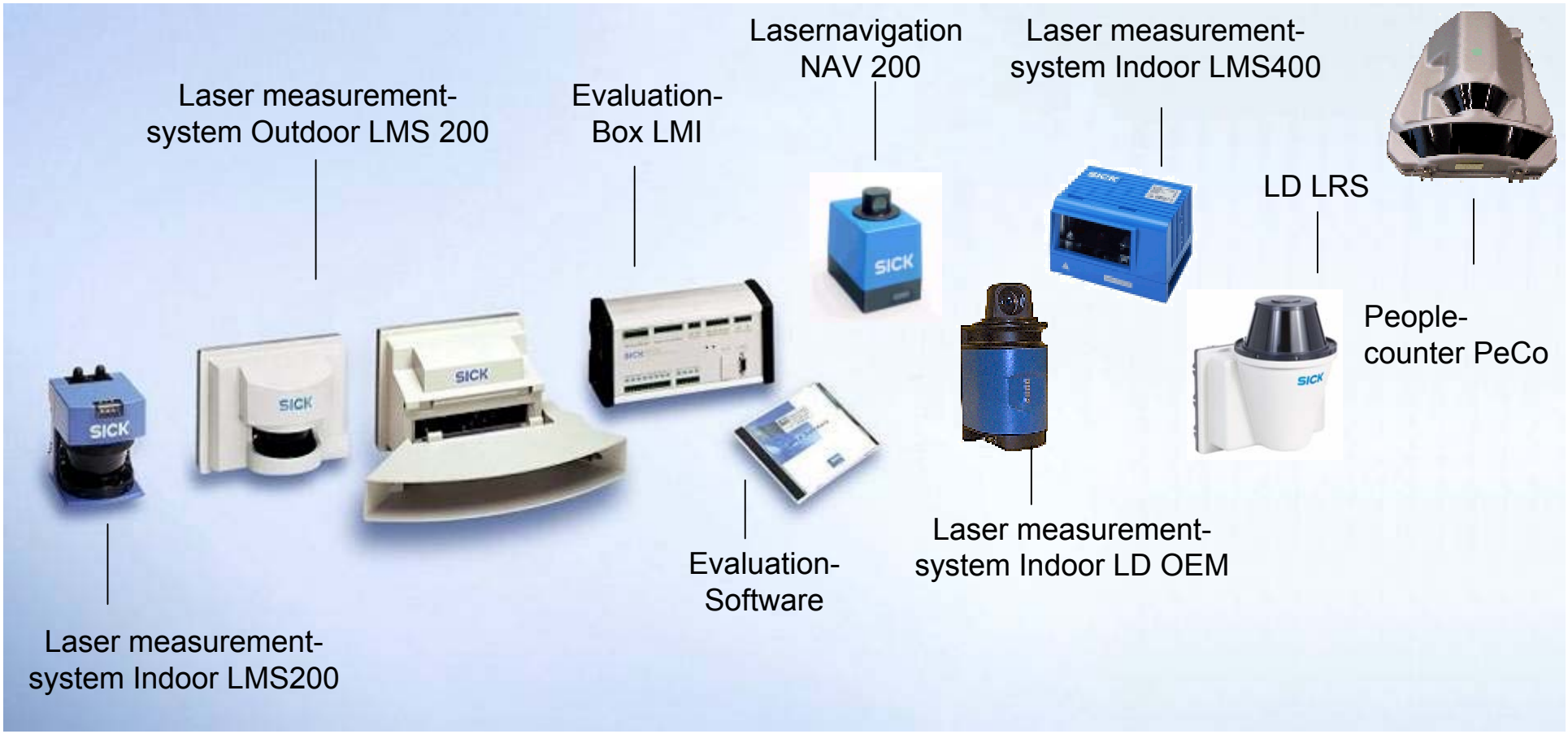
LD with Ethernet and SOPAS

: Auto Ident

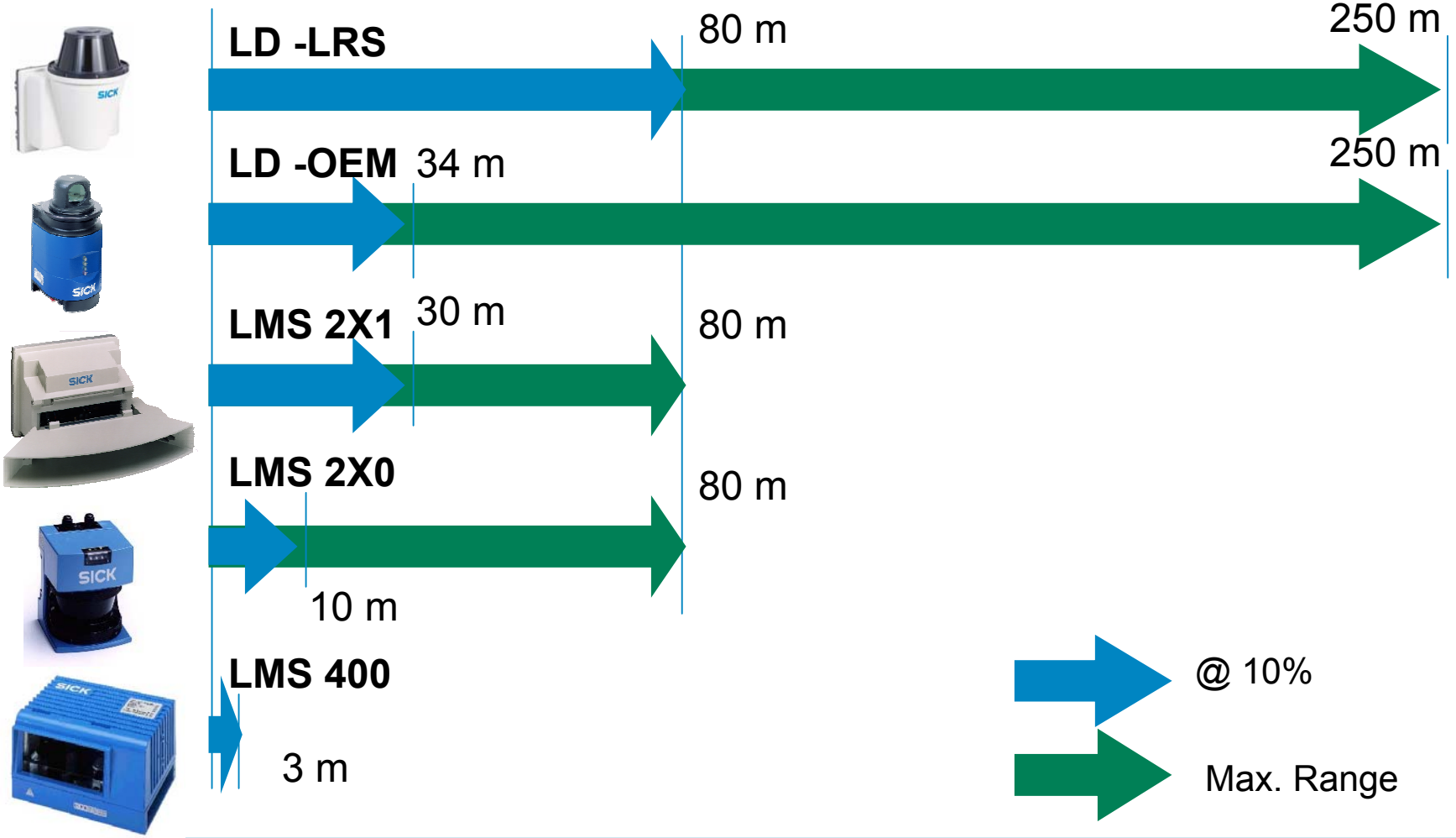
Sept. 2006

Contents

Product portfolio BU07



Product Performance Distance



Product Performance Interfaces

Measurement Data only

RS 232; RS 422;
CAN; Ethernet

LMS 4XX - and
LD XX ; LD-LRS

Measurement + Application

RS 232; RS 422

LMS2XX - and
LMS 2XX- S07

Systems

RS 232;

RS 422

Peco, LD PDS,
NAV

NEWS on LD-OEM

: old order numbers:

1023020
1023021
1023022
1023023

NEW Number
1028698

What's NEW

Differences

- All Interfaces in One Scanner
  - RS232, RS 422 (selectable in the Connection hood)
  - Ethernet
  - CAN
- SOPAS User Interface
- 15 PIN Connector

Communication Interfaces

RS 232 or RS 422:

- up to 115 KBaud
- 8 data bits
- 1 Stop bit
- none parity

CAN 2.0:

- up to 1 MBaud

Ethernet:

- 10 MBaud
- peer-to-peer

Ethernet Data Structure

: Data structure via Ethernet Interface for realtime measurement

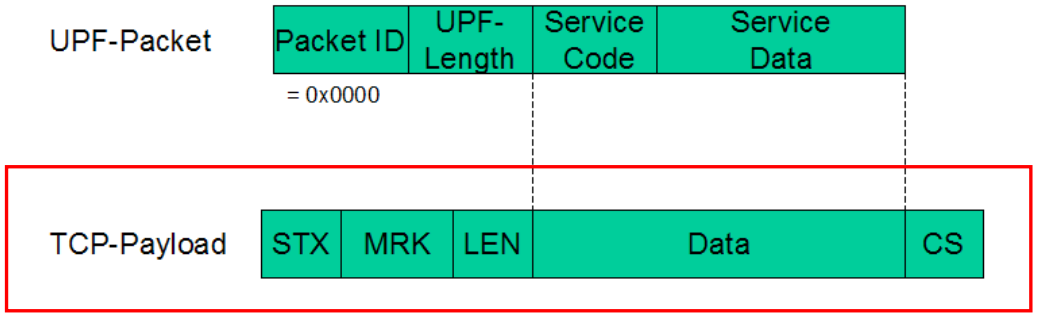
The communication protocol follows the TCP / IP standard. The transferred data is split up into multiple packets. For the programmer this is not relevant. On the receiving end the individual packets are automatically collected and put into the correct sequential order.

The connection will be established via the **Port 49152**

Ethernet selection screen in OPAS

Ethernet Data Structure

: Data structure via Ethernet Interface for realtime measurement



STX „Start of Text“, will be transferred as a single byte, 0x02.

MRK Definition of the transmission format „USP“= 0x55, 0x53,0x50 (3 Bytes),

LEN UPF-Length = the number of following bytes in <data>,coded as 32-Bit-Integer (four bytes) without leading sign; the msb (most significant byte) must be transmitted first of all.

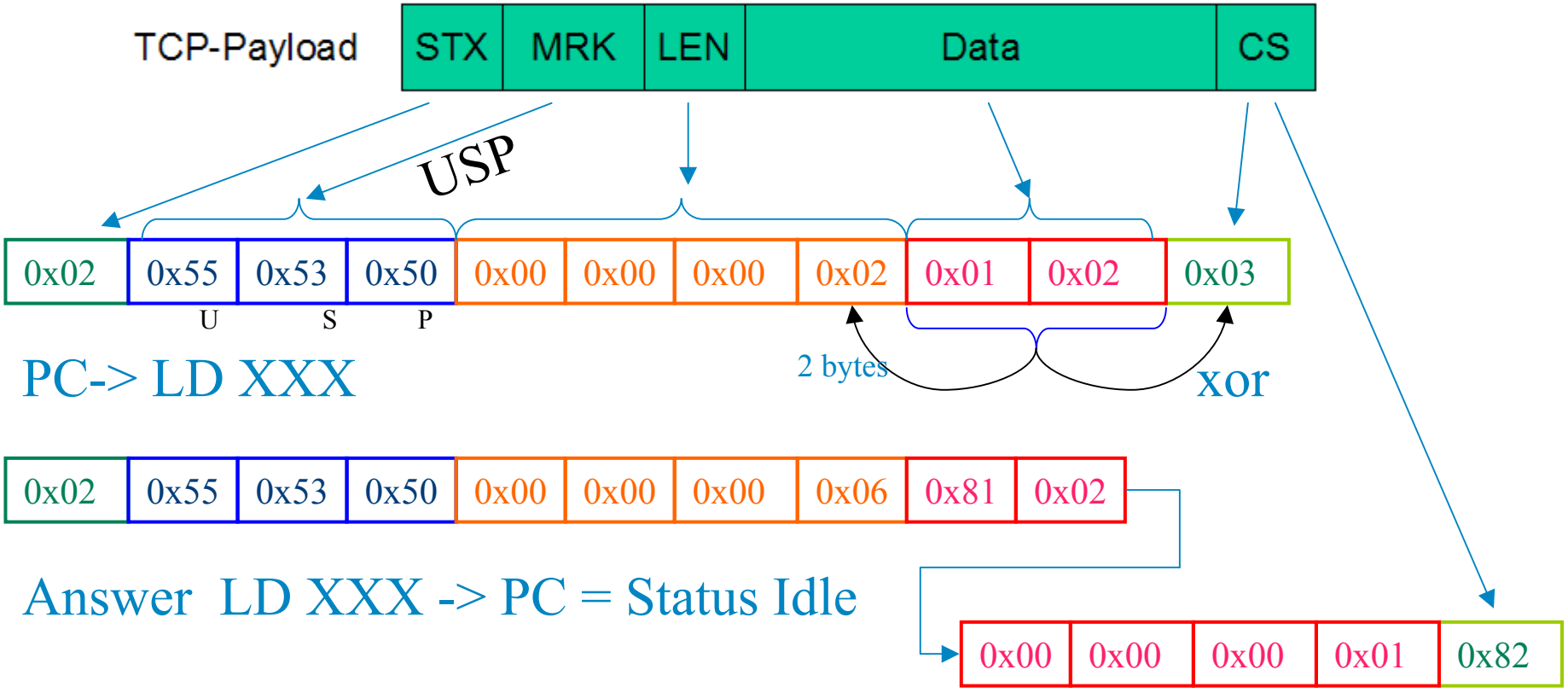
CS Checksum, is a single byte, calculated as exclusive-or-relation of all bytes contained in „Data“.

Service Code and Service Data are conform to format that is described in the telegram listing of the LD OEM.

Ethernet selection screen in SOPAS

Ethernet Data Structure

- Data structure via Ethernet Interface
- Example : Request for status



Connections and Pin-out

Ethernet

Connection Cap

Power
& I/O's

Can 2.0

Serial interface
Terminal RS 232
Host RS 232 or 422

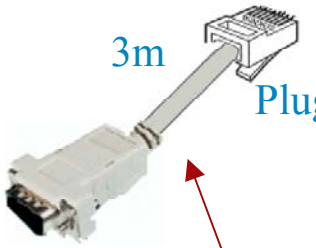
Connections and Pin-out

Pin assignment in 15-pin D-sub plug (high-density)

Pin	Signal				Function
1	V-EXT				Voltage supply, sensor (24VDC)
2	CAN L				CAN bus (IN/OUT)
3	CAN H				CAN bus (IN/OUT)
4	Signal GND				Ground
5	GND EXT				Ground, sensor
6	RS-422	RD_HST+	RS-232	Not occupied	Host interface (receiver)
7		RD_HST-		RxD_HST	
8		TD_HST+		Not occupied	Host interface (transmitter)
9		TD_HST-		TxD_HST	
10	OUT 1				Output 1
11	TPIP				Ethernet interface IN
12	TPIN				Ethernet interface IN
13	TPOP				Ethernet interface OUT
14	TPON				Ethernet interface OUT
15	OUT 2				Output 2

Connections and Pin-out

Power supply



3m

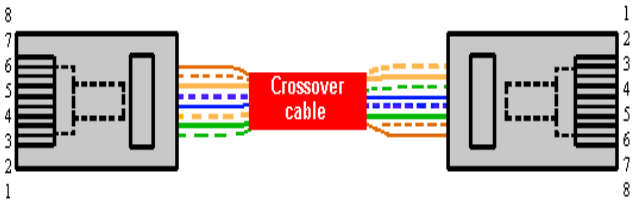
Plug

Socket

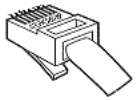
PC/Laptop:
used as Host
with
Ethernet
connection

or

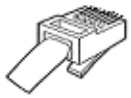
Cat 5 Coupler



Switch



Ethernet cable
(cross link)



Parametrization cable
crossover
D-Sub 15-HD to RJ45
(6032509)

Steps for communication setup

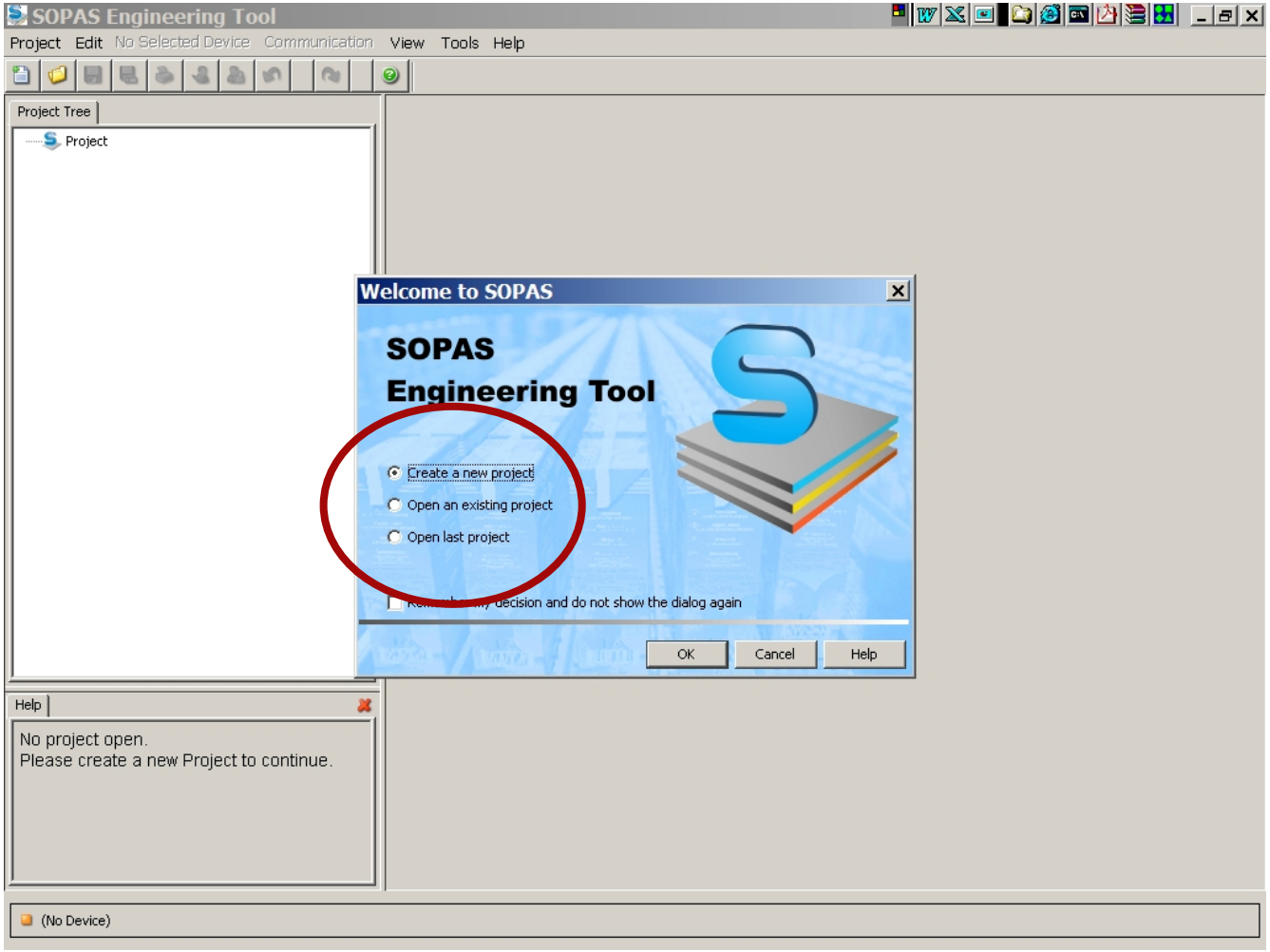
- Connect Hardware
- Parameterize LD XXX
- Send measurement commands to LD XXX
- Receive scans and process

Parameterize LD XXX by SOPAS

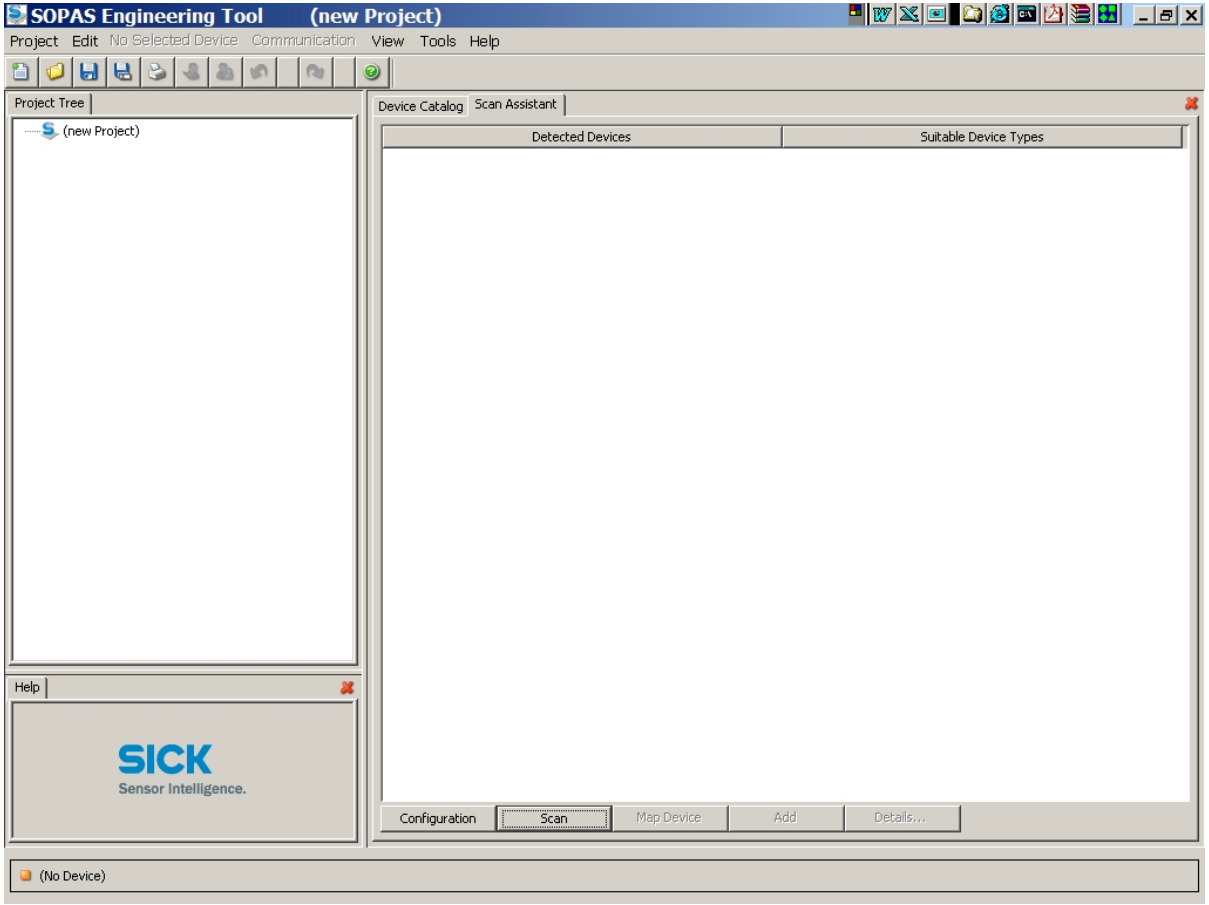
(for simplicity use Terminal RS 232 connection):

- : Start SOPAS Software with new project
- : Select interface and scan for device
- : Login and change user Level
- : Change basic parameters
- : Scan profiles

Start SOPAS with new project

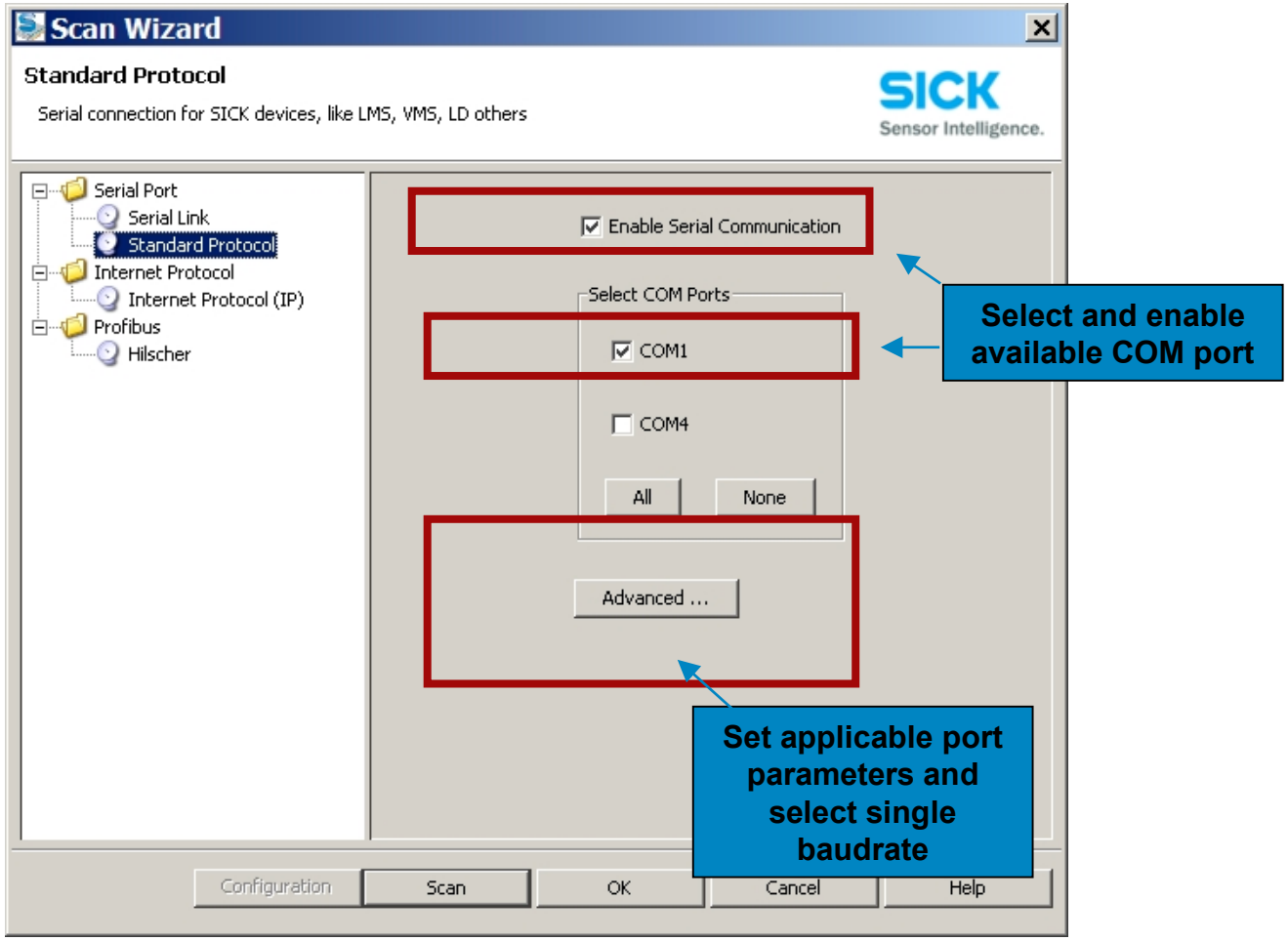


Start SOPAS with new project



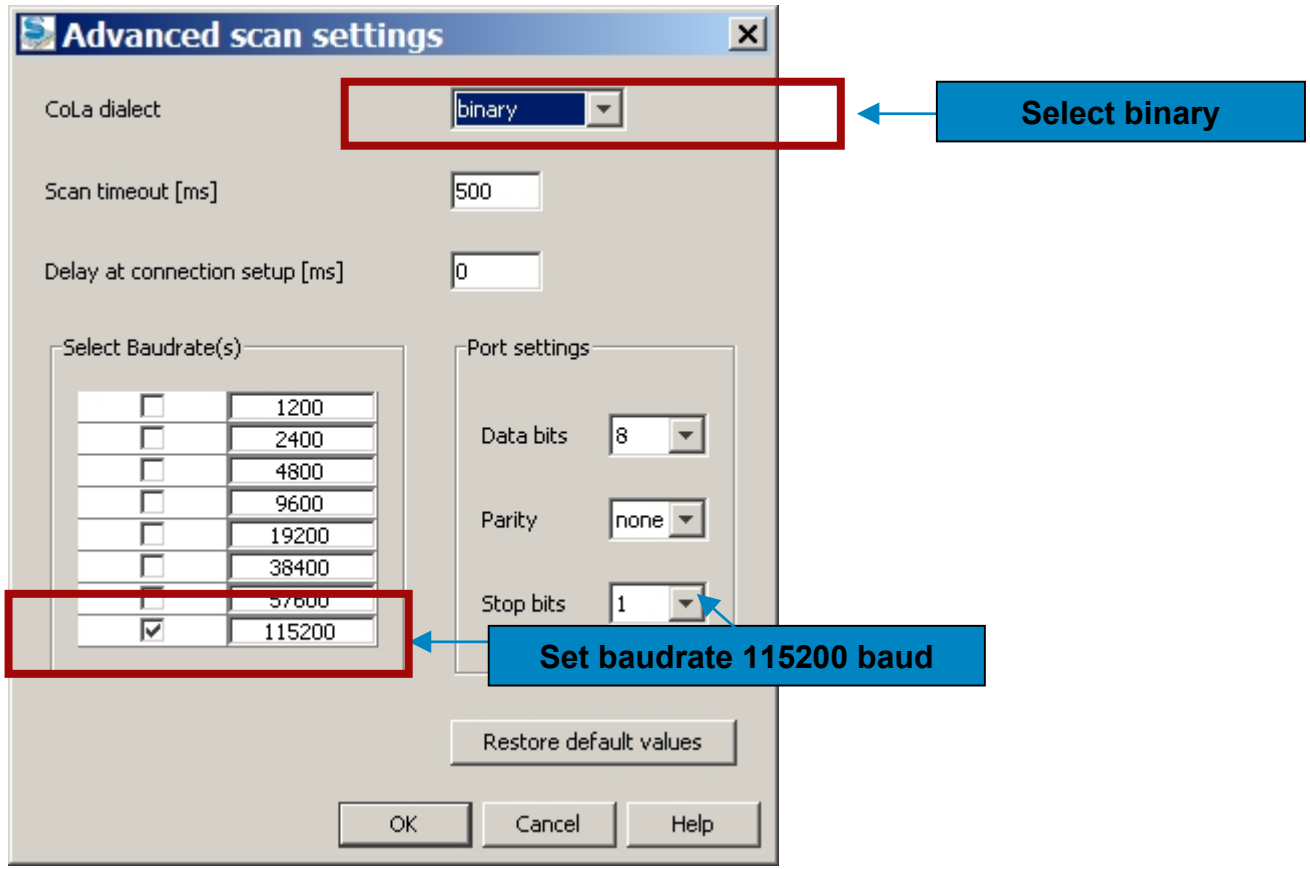
SOPAS Start up screen

Select interface and scan for device



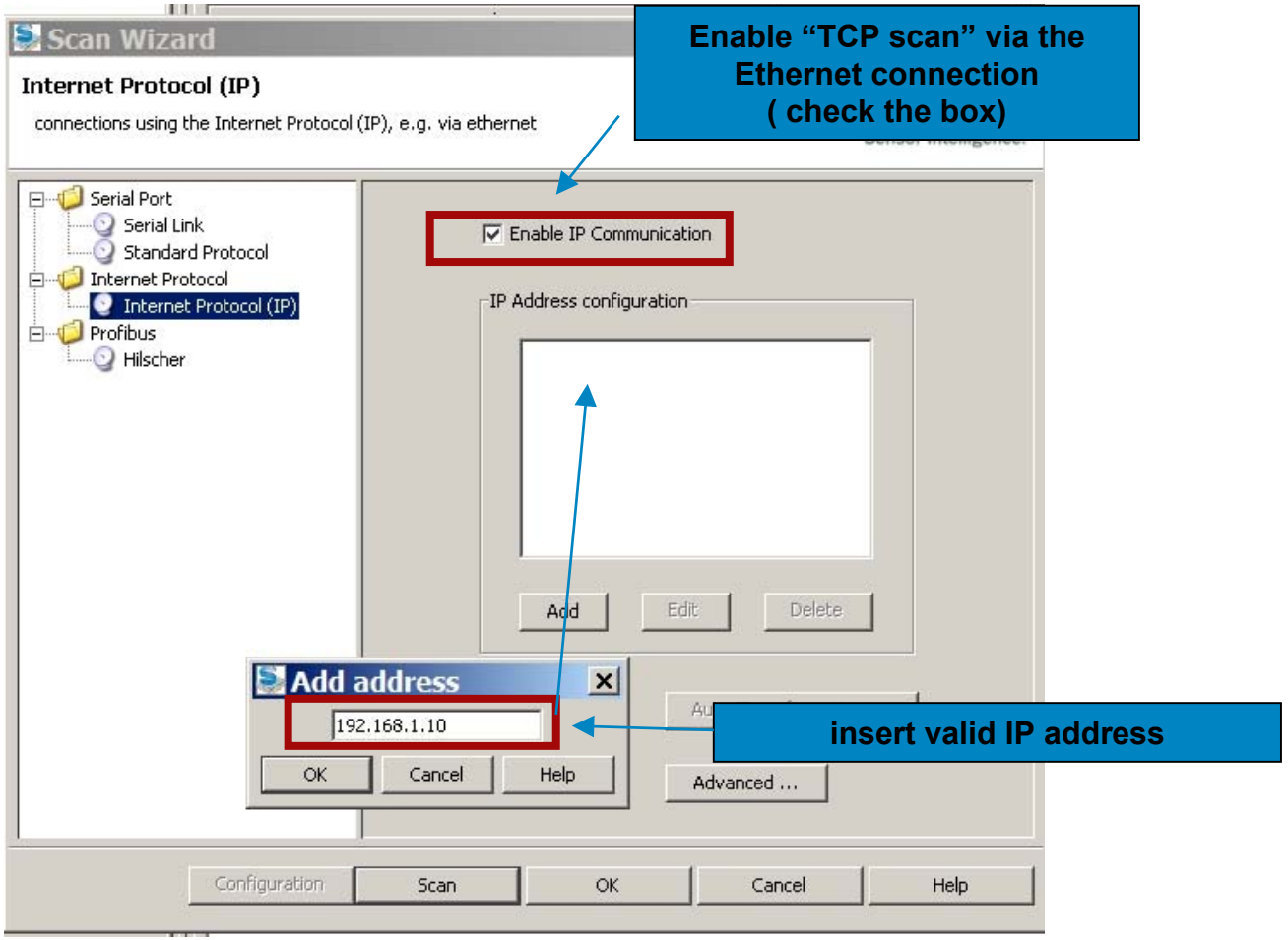
Serial interface selection screen

Select interface and scan for device



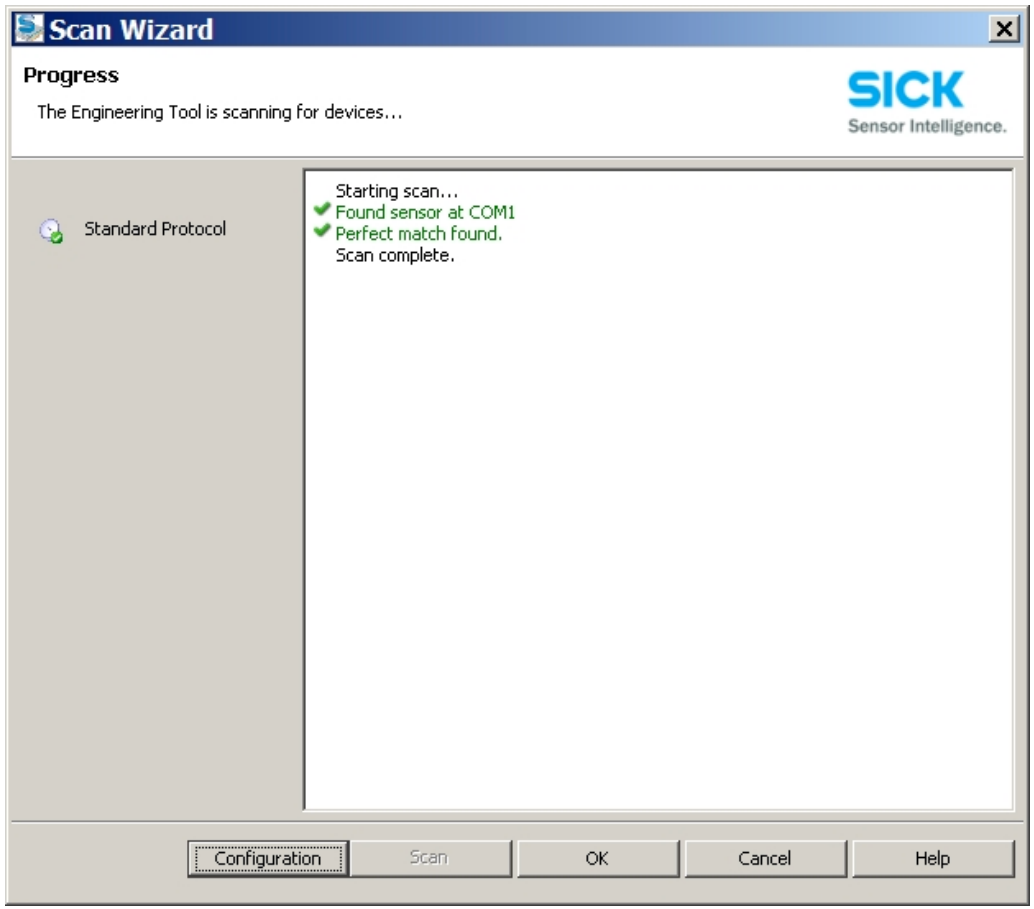
Serial interface advanced selection screen

Select interface and scan for device



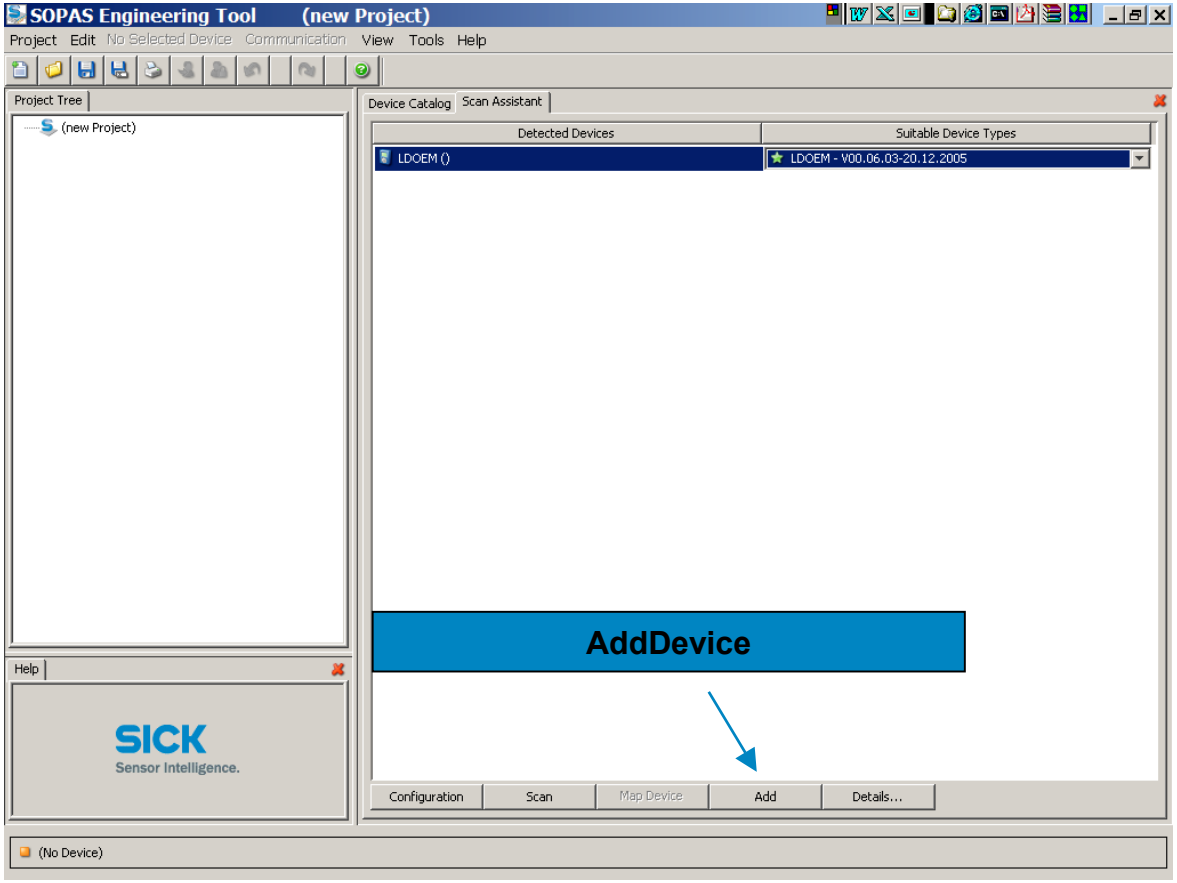
Ethernet selection screen

Select interface and scan for device



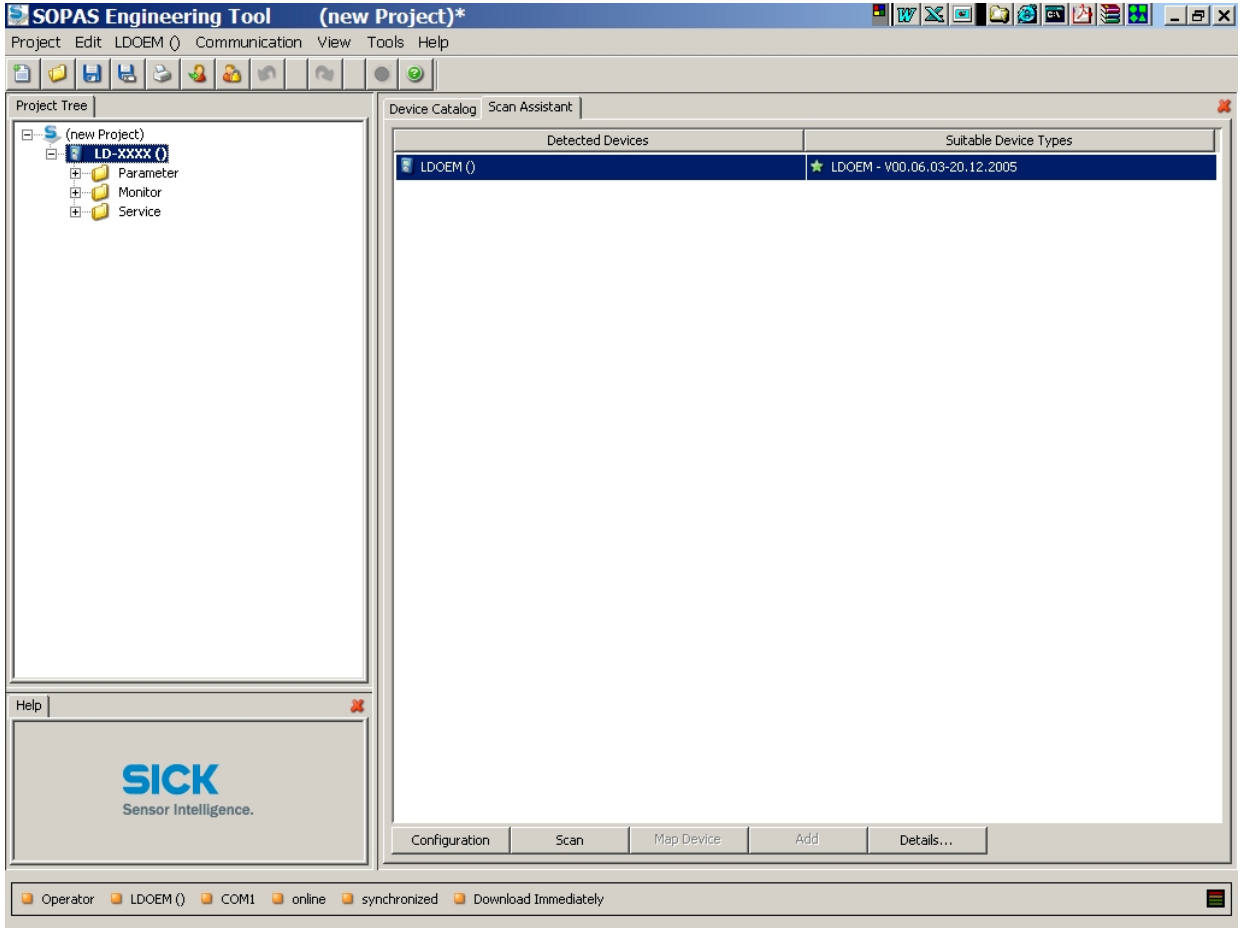
Scanner found and matching

Select interface and scan for device



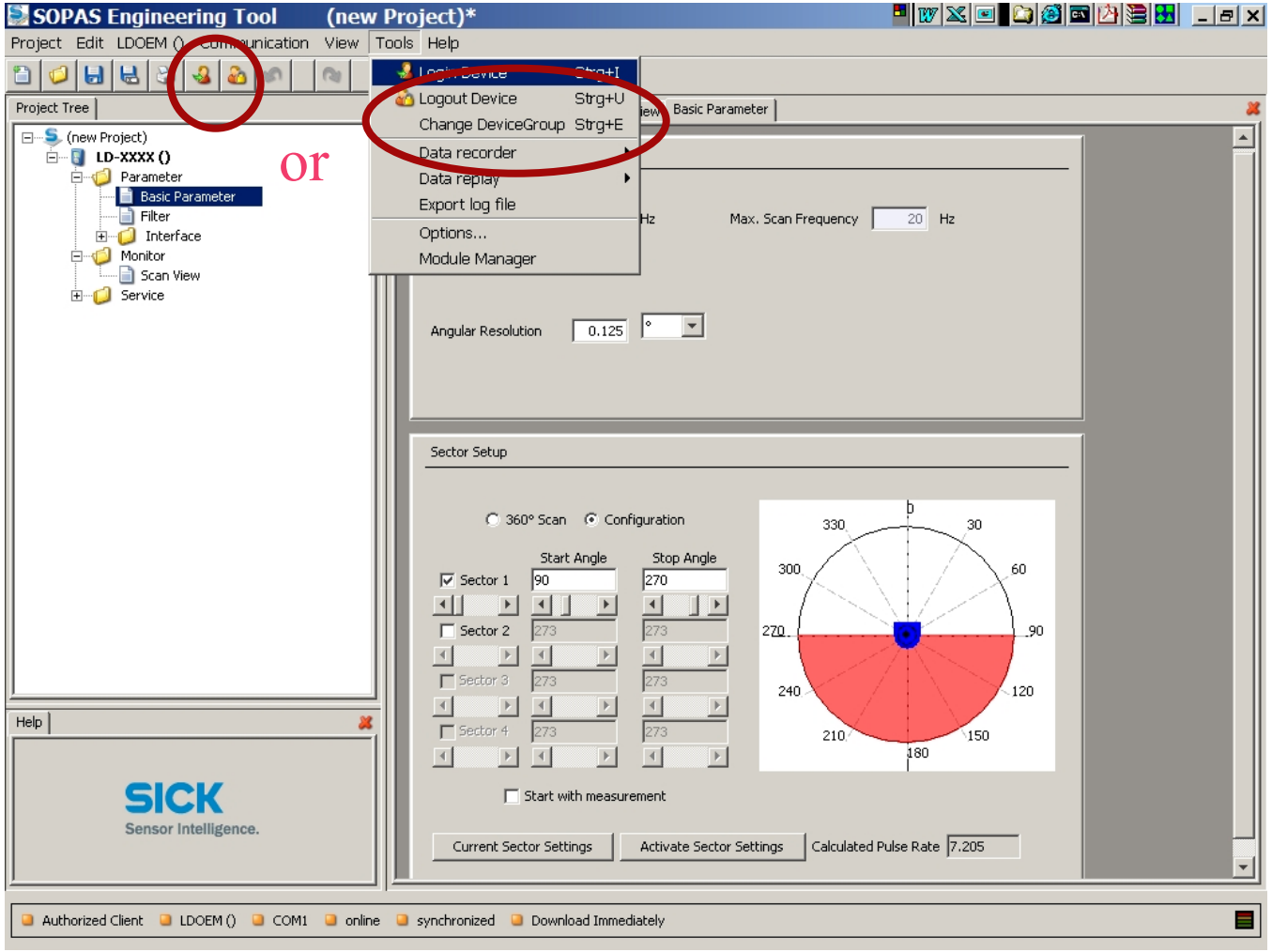
Add device

Select interface and scan for device



LD XXX connected and synchronized

Login to device and change user level

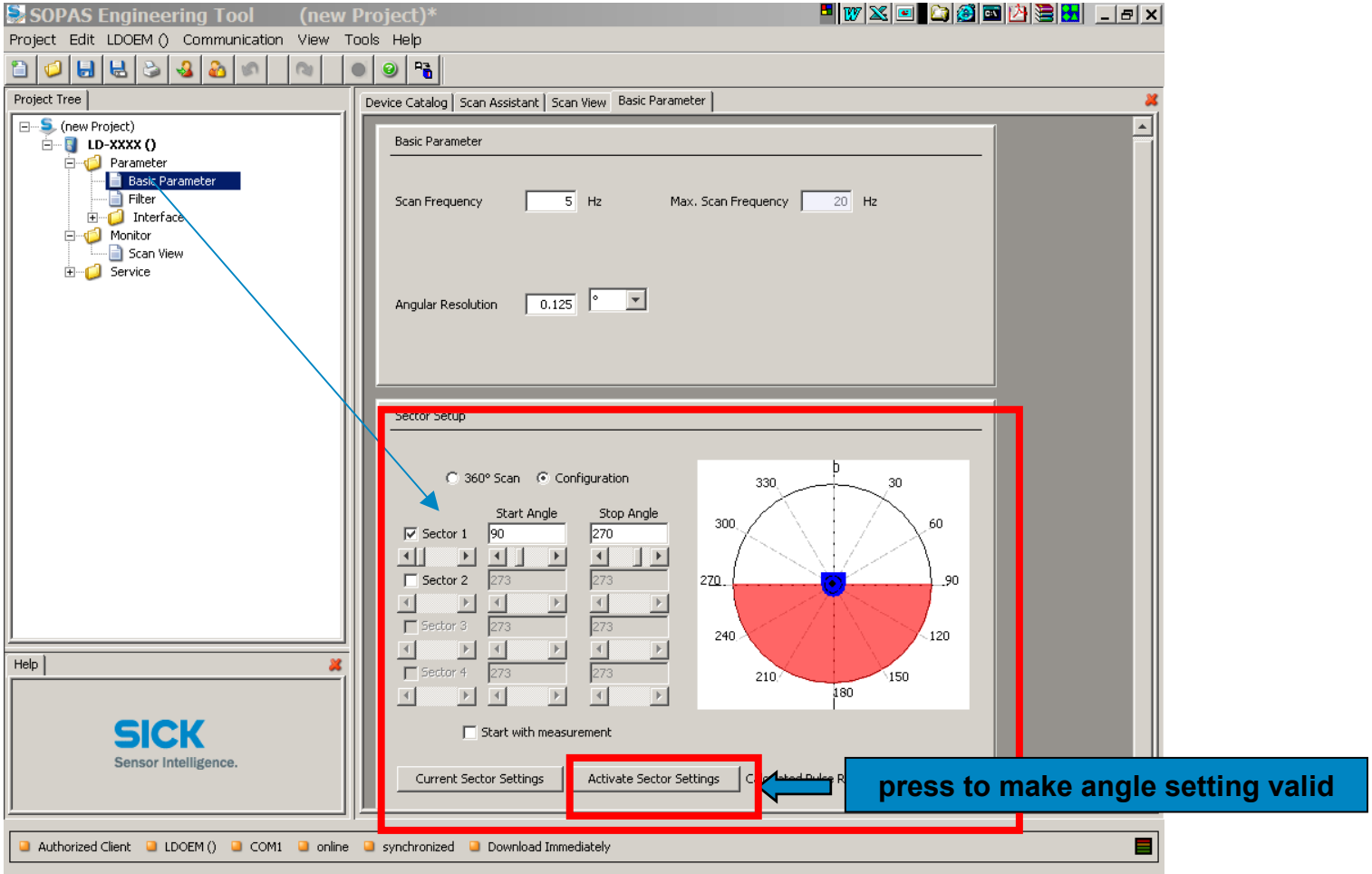


Login to device and change user level

Select user level

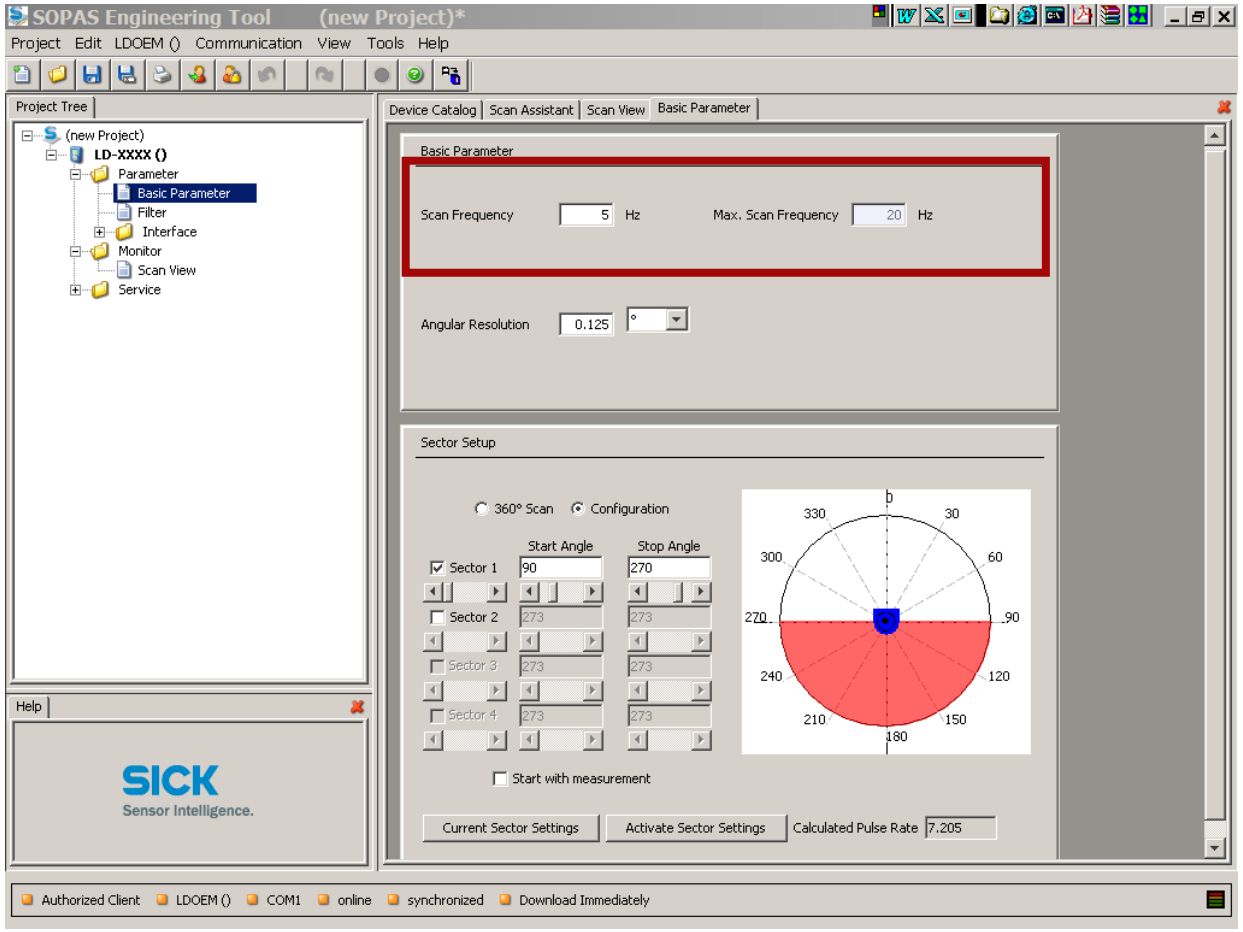
Select user level and put in password 'client' (request initial password from SICK)

Change basic parameters



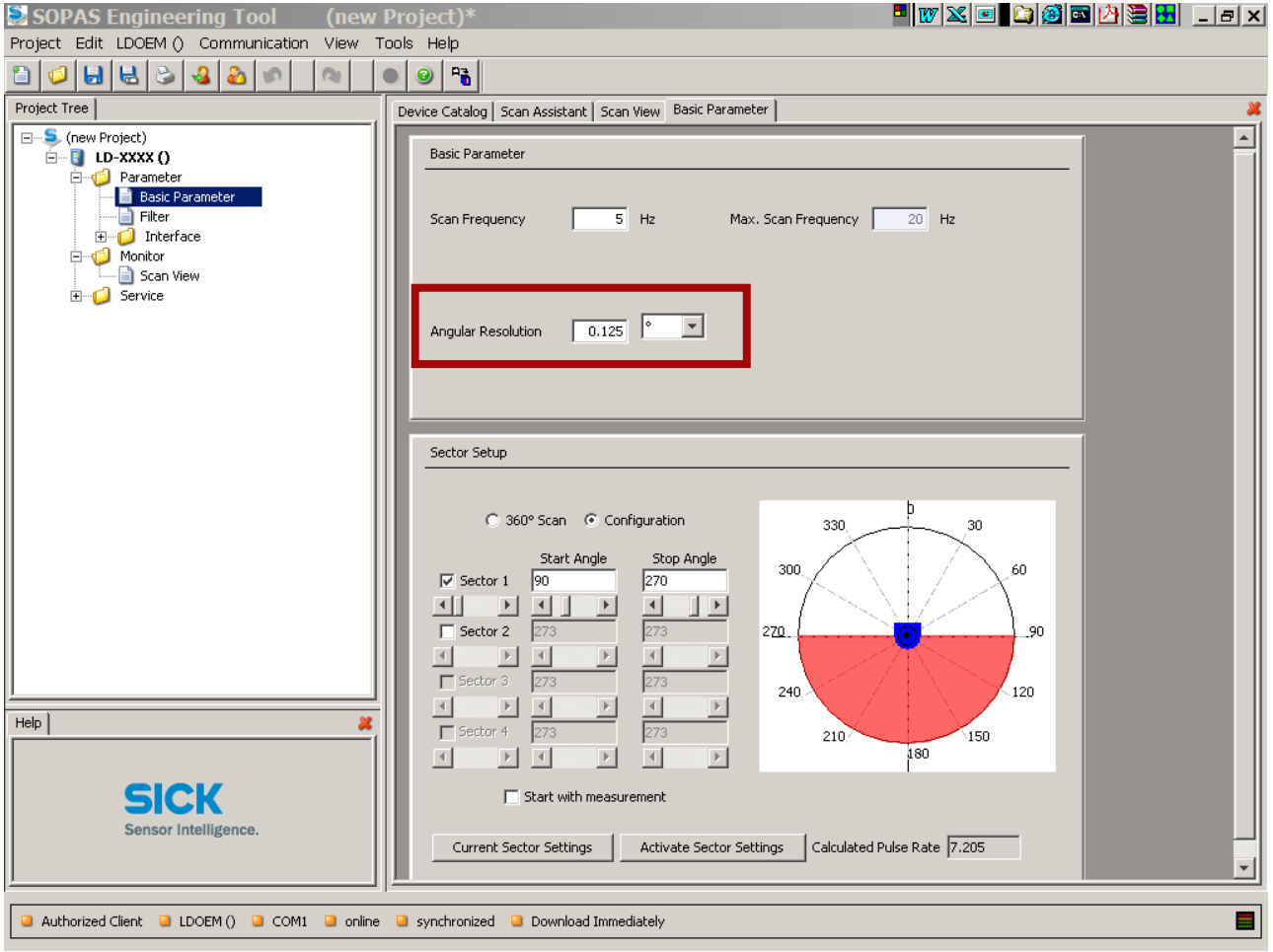
Set angular range

Change basic parameters



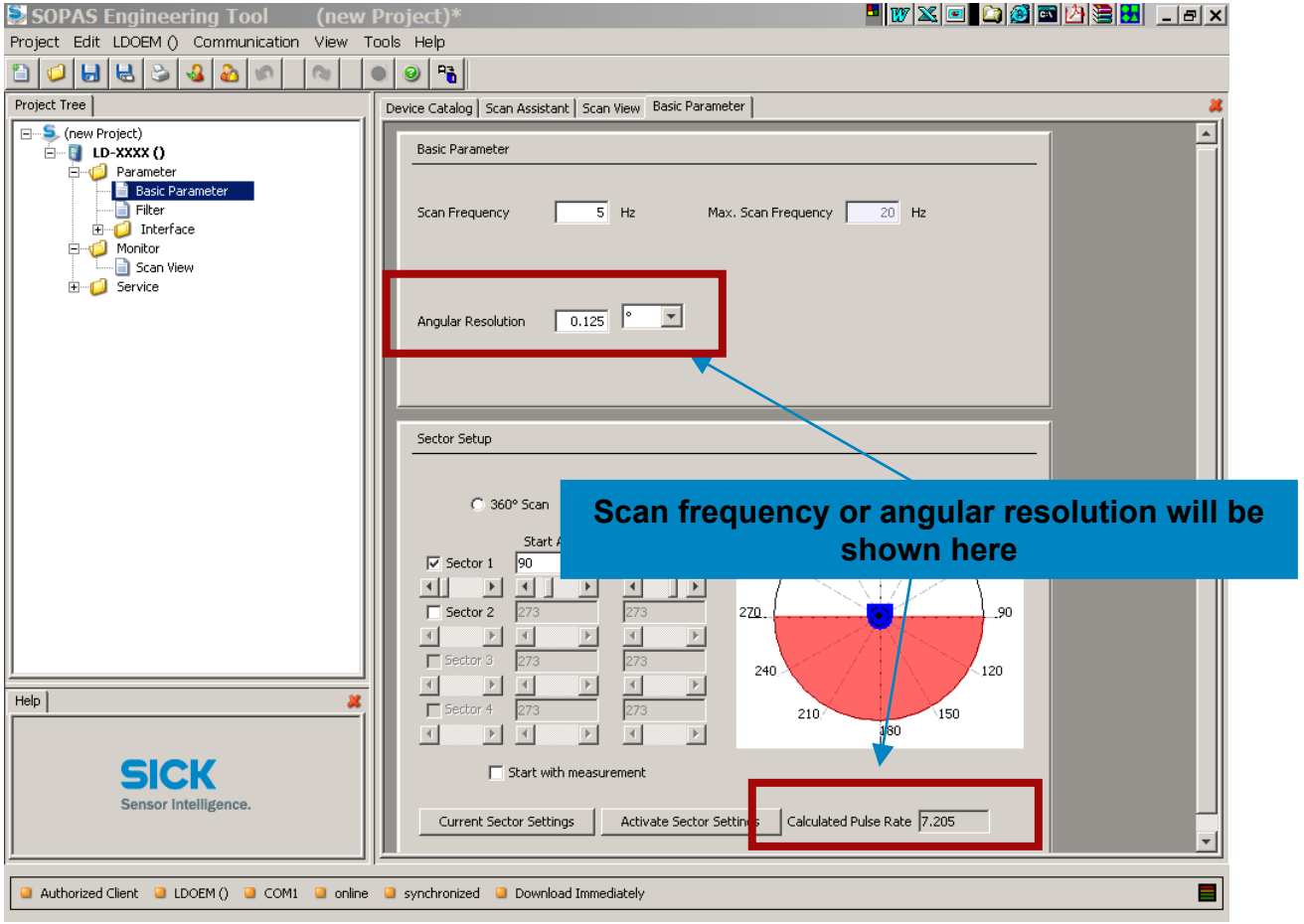
Set scan frequency

Change basic parameters



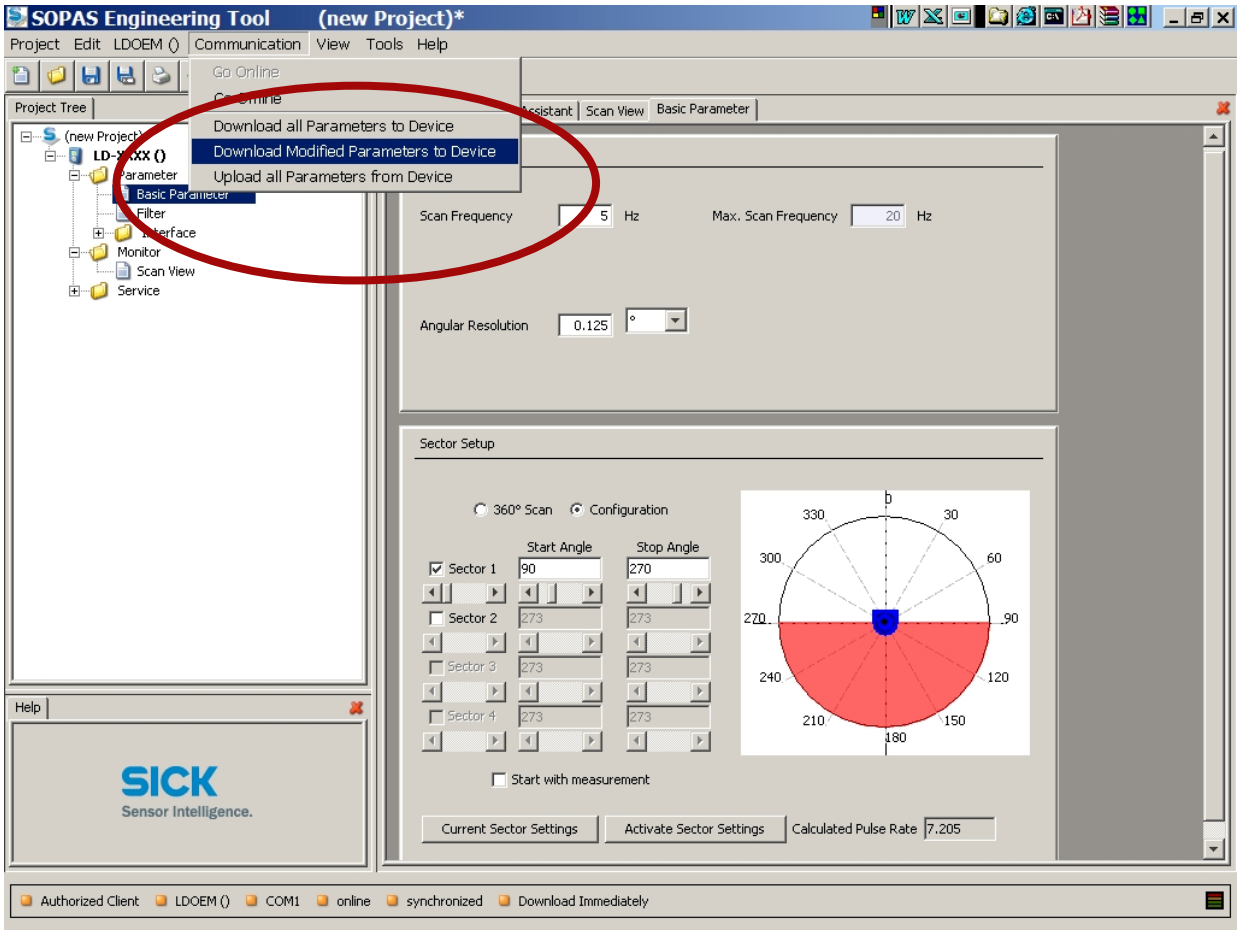
Set scan resolution

Change basic parameters



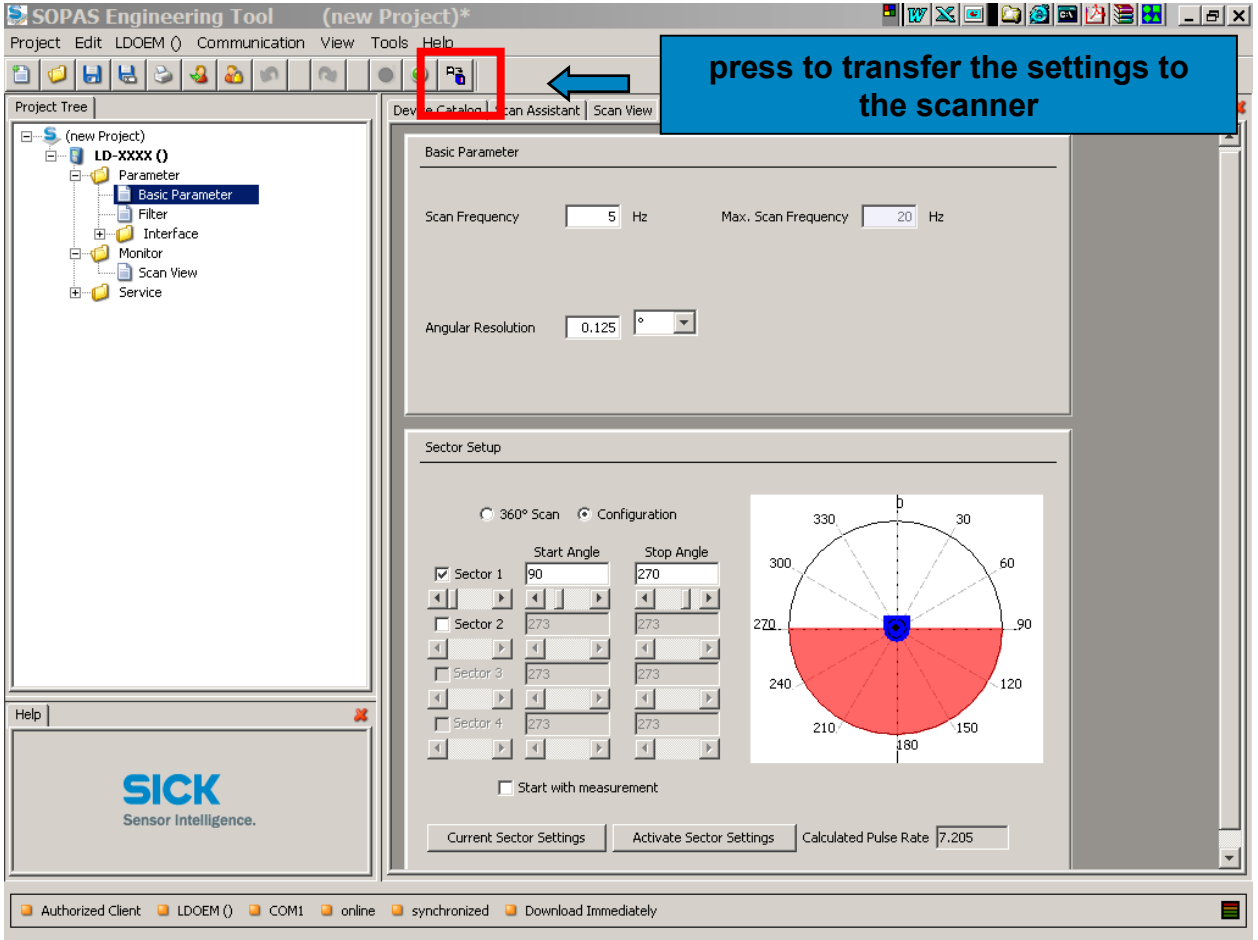
Check the result box if settings valid

Change basic parameters



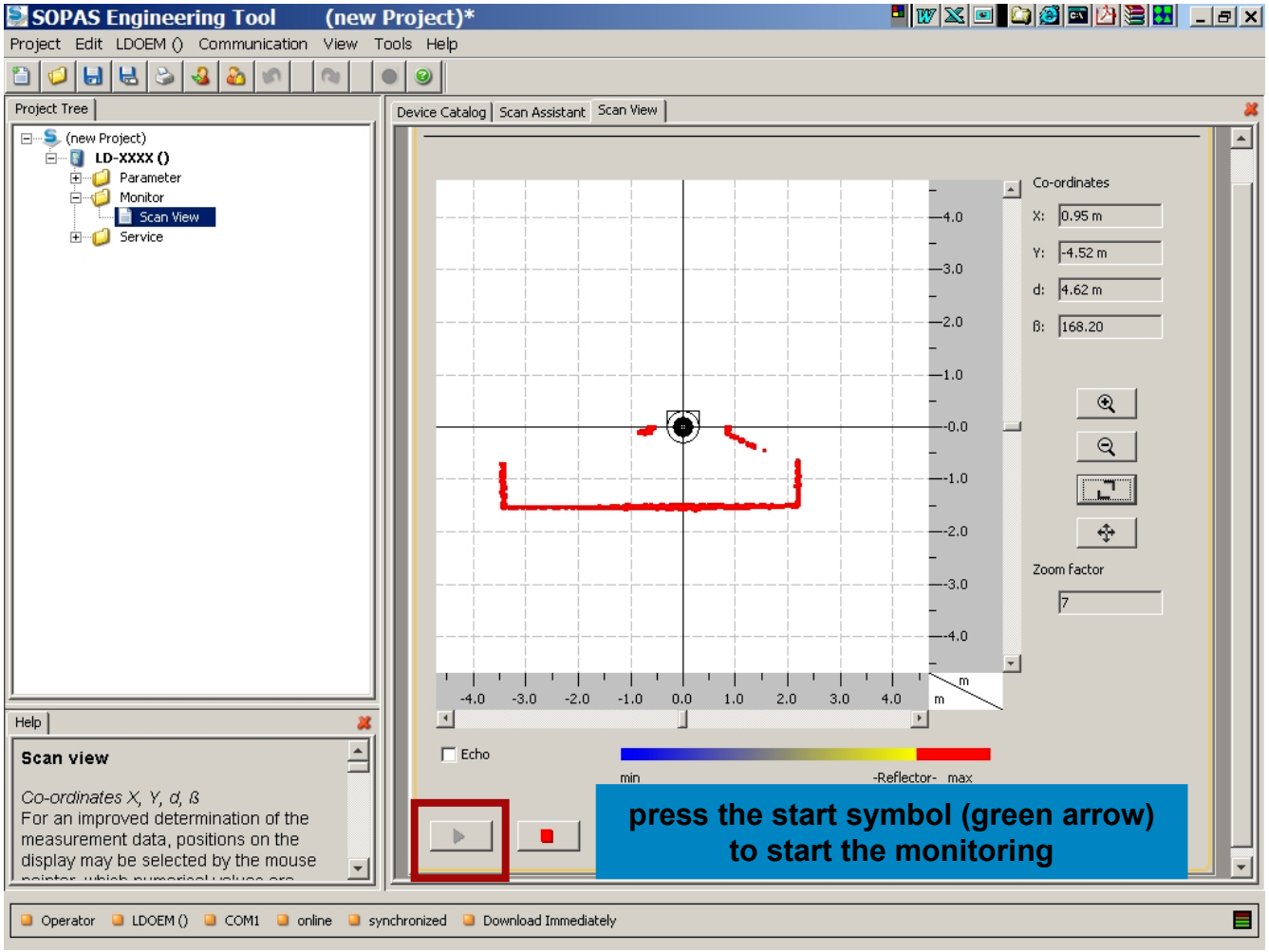
Download parameters if “Download on demand is selected”

Change basic parameters



Save Parameters permanently in LD-OEM

Scan profiles



Thank you
for your attention!