ABB MOTION SERVICES

ABB Ability™ Digital Powertrain condition monitoring for rotating equipment What's new? PI34

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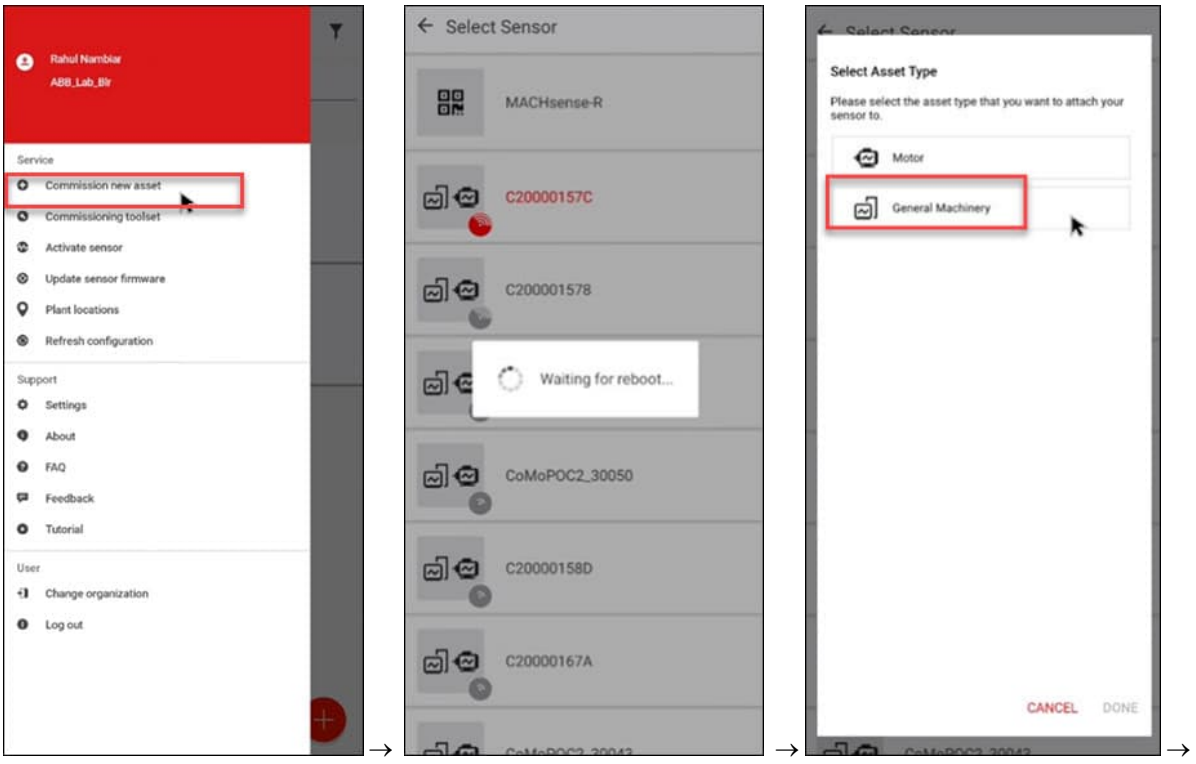
New features

New General Machinery profile for Gen 2 sensor

The Gen 2 sensor asset type includes a new General Machinery profile. The new profile includes asset commissioning/decommissioning and adds load measurement data and health condition data. The profile also includes new set of asset icons.

To Commission the asset, follow below steps. See the workflow in below sample screens:

1. In Smart Sensor mobile app, go to main menu and tap Commission new asset.
2. From the list of scanned sensors, select the device to proceed. Follow the instructions on the screen.
3. The selected device will connect and check for firmware update and prompts for sensor reset.
4. The sensor reboots.
5. Select the asset type to attach with the sensor, e.g., General Machinery.
6. In the list of sensors, select the required sensor to add.
7. Select an asset group and an asset image. You can capture and add the image.
8. In the Nameplate info, select a machinery category. The nameplate information is written in the sensor.
9. The commissioning completed message appears. The asset is now ready to add load measurement data and operational parameters.



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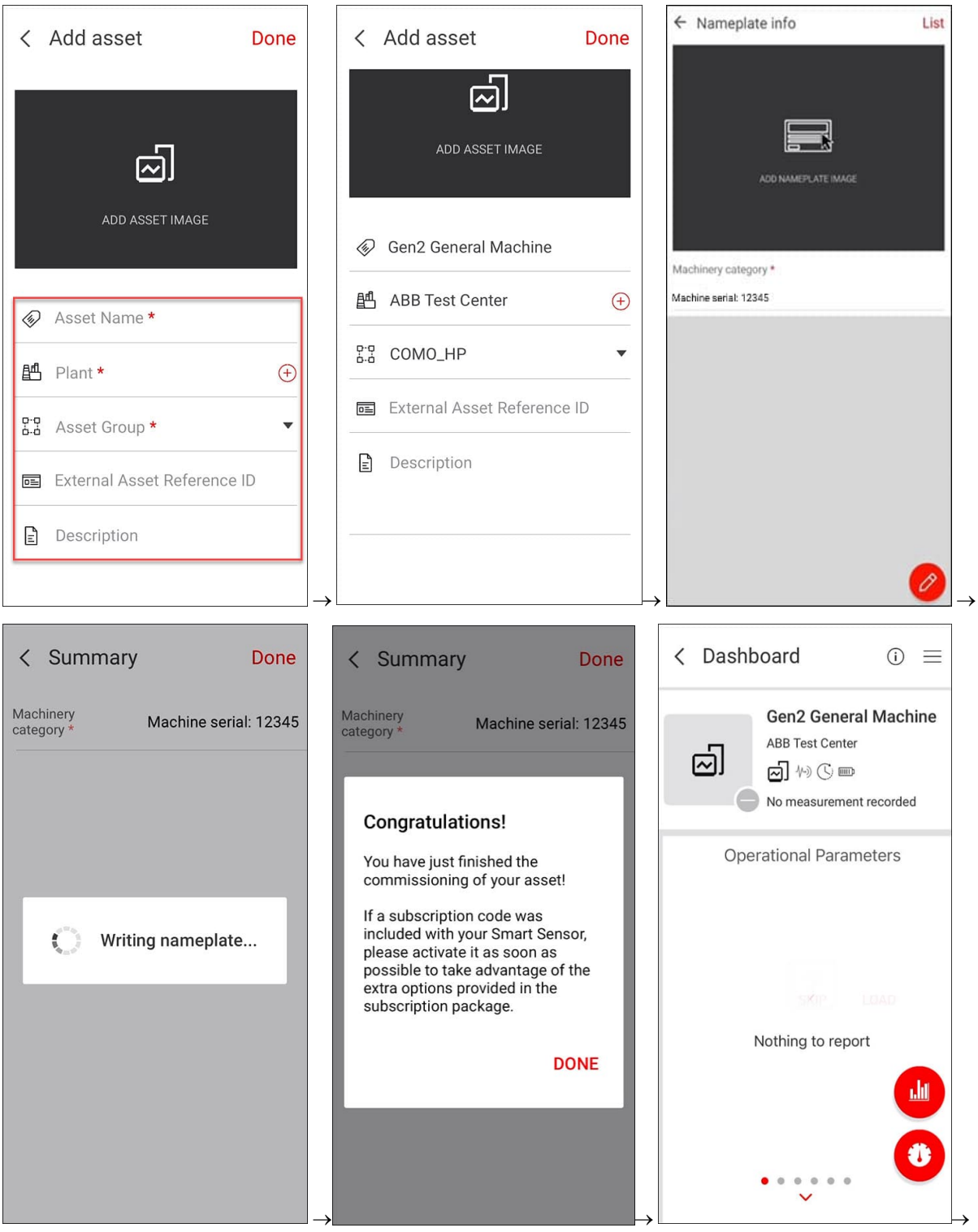

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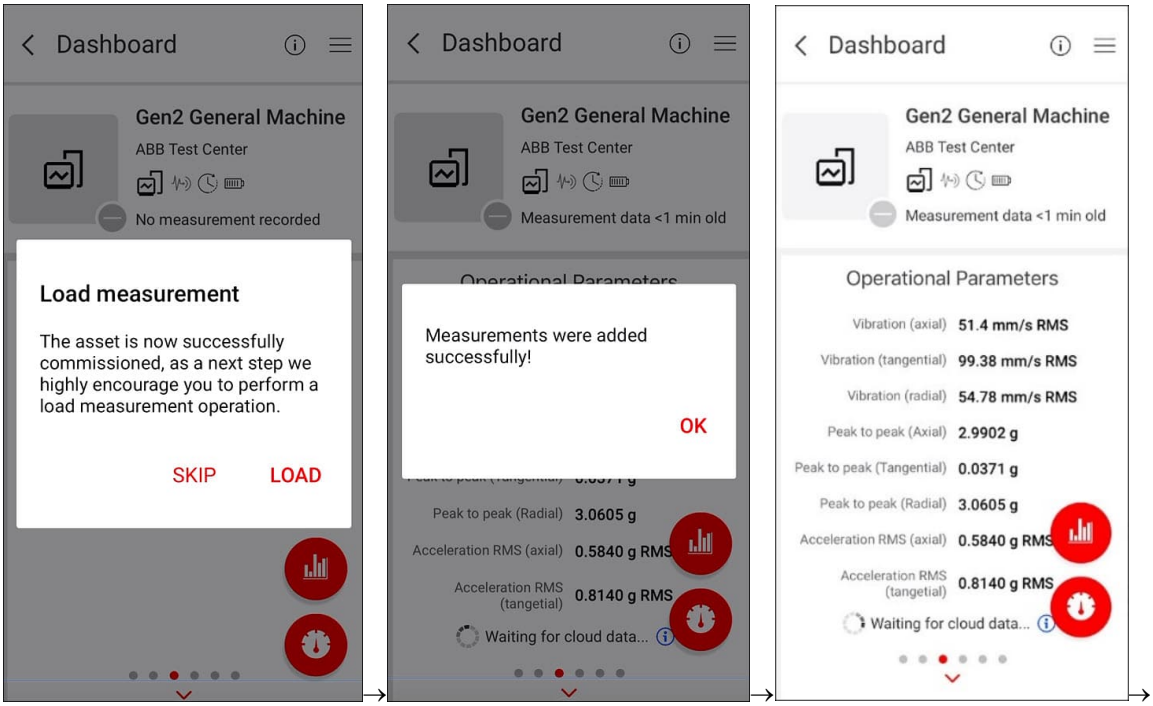

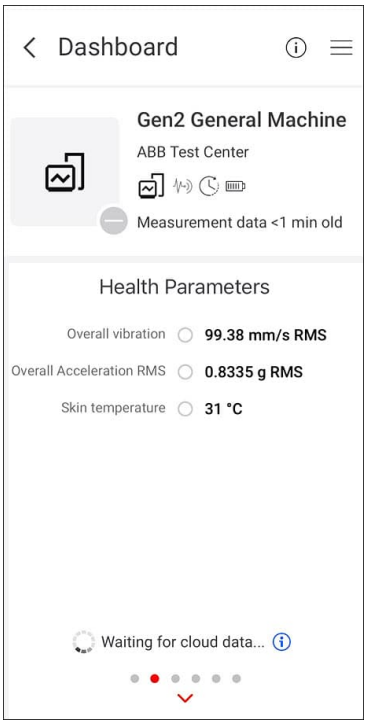

To decommission the asset, follow below steps. See the workflow in below sample screens:

1. In Smart Sensor mobile app, go to asset dashboard and tap the Hamburger menu.
2. Tap Asset Management → Decommission asset.
3. Select a reason for decommissioning the asset and tap OK to proceed.

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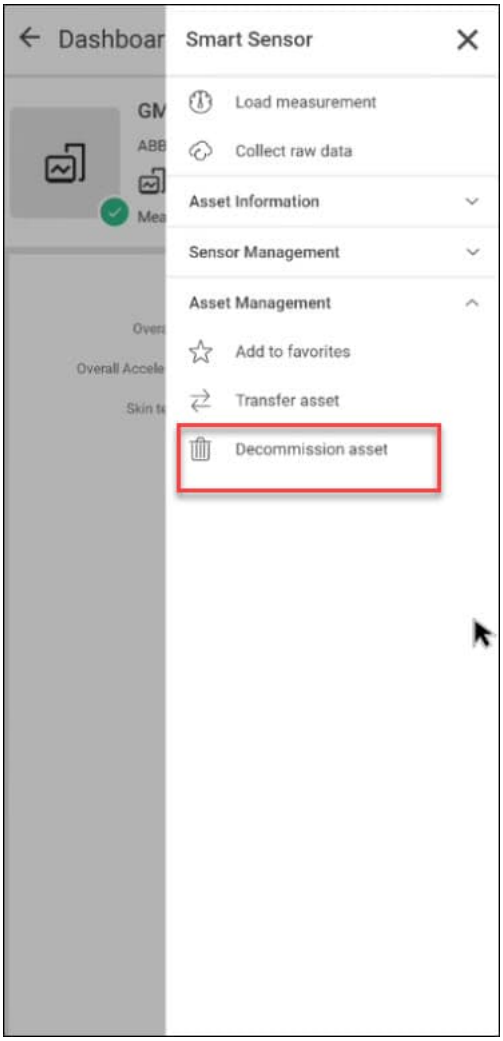

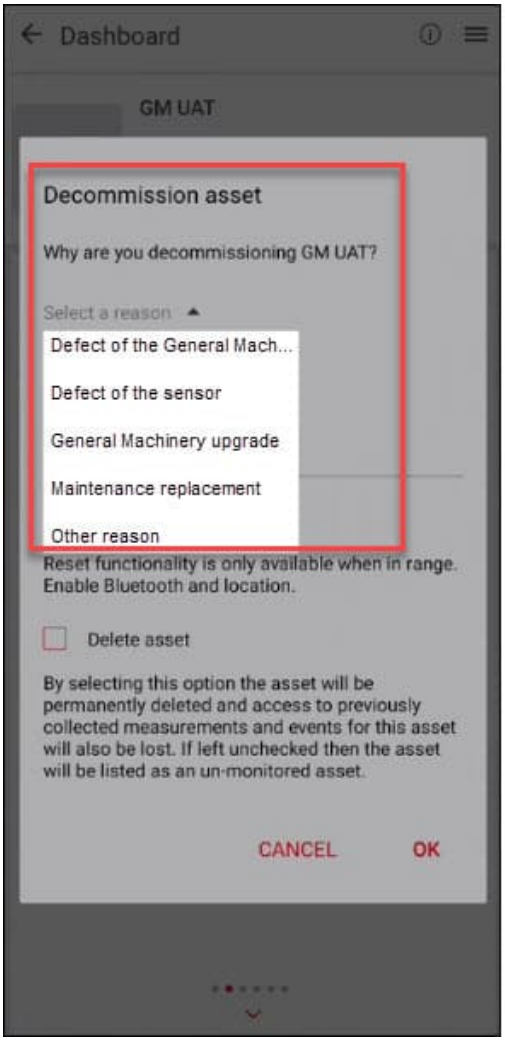

Improved NFC activation animation and instructions for Gen 2 sensors

Smart Sensor mobile app shows an updated animation and instructions for Near-field communication (NFC) activation of Gen 2 sensors. See the below animations.

Como_Anim_05.mp4

NFCSwipeAction.mp4

NFCTapAction.mp4

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Pump profile disabled for Gen 2 sensors

With the introduction of General machinery profile, the Gen 2 sensors supports only Motor and General Machinery profiles. So, pump profile is disabled.

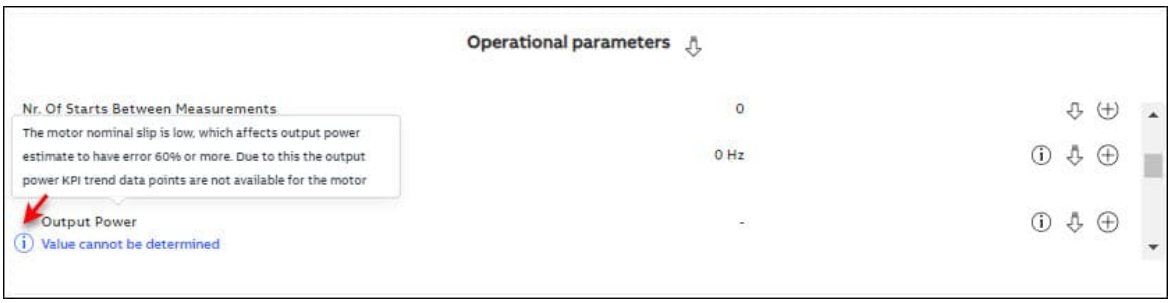
In Smart Sensor mobile app, the Gen 2 sensor profile does not list pump profile. See the below sample screen.

Accuracy of output power and slip calculation for motors is improved

Smart Sensor portal shows the improved output power and slip calculation. Previously, the output power points were only shown on the trend. The current implementation is to calculate the output power when the slip is above 5 rpm. Note that the limit is set to 5 rpm because below this limit slip is low and accuracy of output power is worse.

Note: A new parameter Slip is added (but *hidden to user*) for calculating the slip value from rated speed and rated line frequency values that are taken from the nameplate.

During commissioning, a warning message appears to notify that if slip is ≤ 5 RPM, the output power cannot be determined for the given motor type. You can mouse hover on the info button to see the explanation (see in below sample figure).



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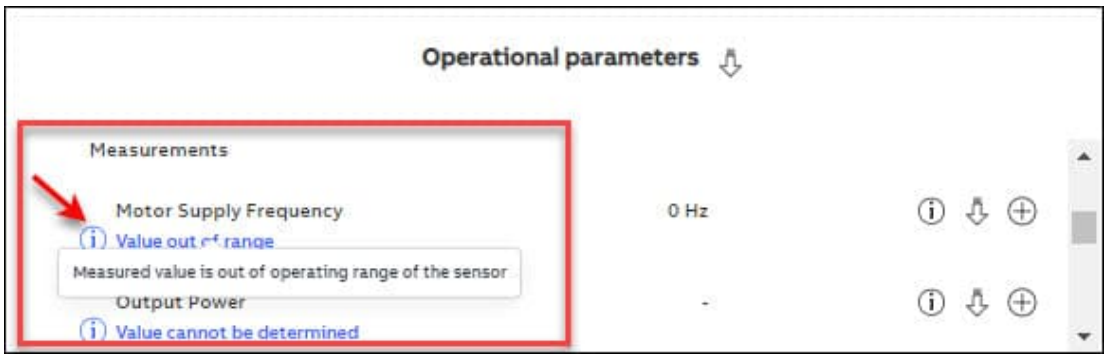
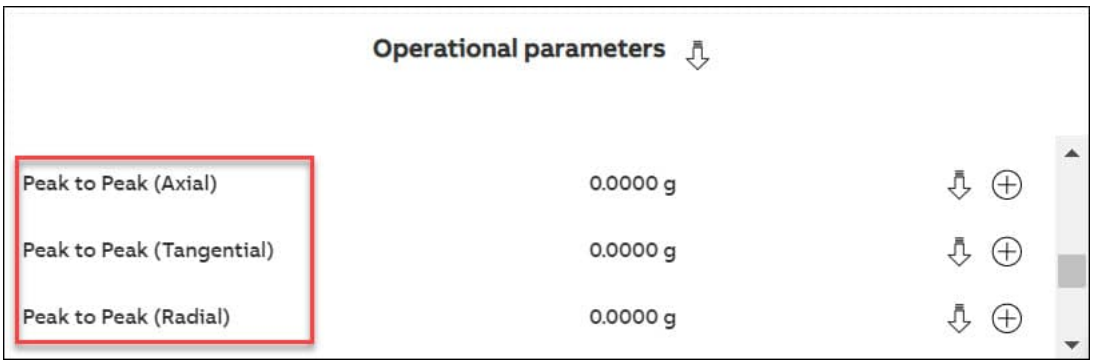
Validation of operational parameters data

In Smart Sensor portal, the operational parameters data is validated against defined rules to make sure that measured data is within the expected ranges. If data points exceed the ranges, they are not shown in the trend view. You can mouse hover on the specific KPI to see the explanation (see in below sample figure).



KPI parameter 'Peak to Peak' renamed

In Motor and General machinery profiles, the naming of operational parameter 'Peak to Peak' appears in a new format to match its associated axial / radial / tangential values. For example, Peak to Peak (X) appears as Peak to Peak (Axial). Similarly, … (Y) appears as … (Tangential), and … (Z) appears as … (Radial). See in below sample screen:



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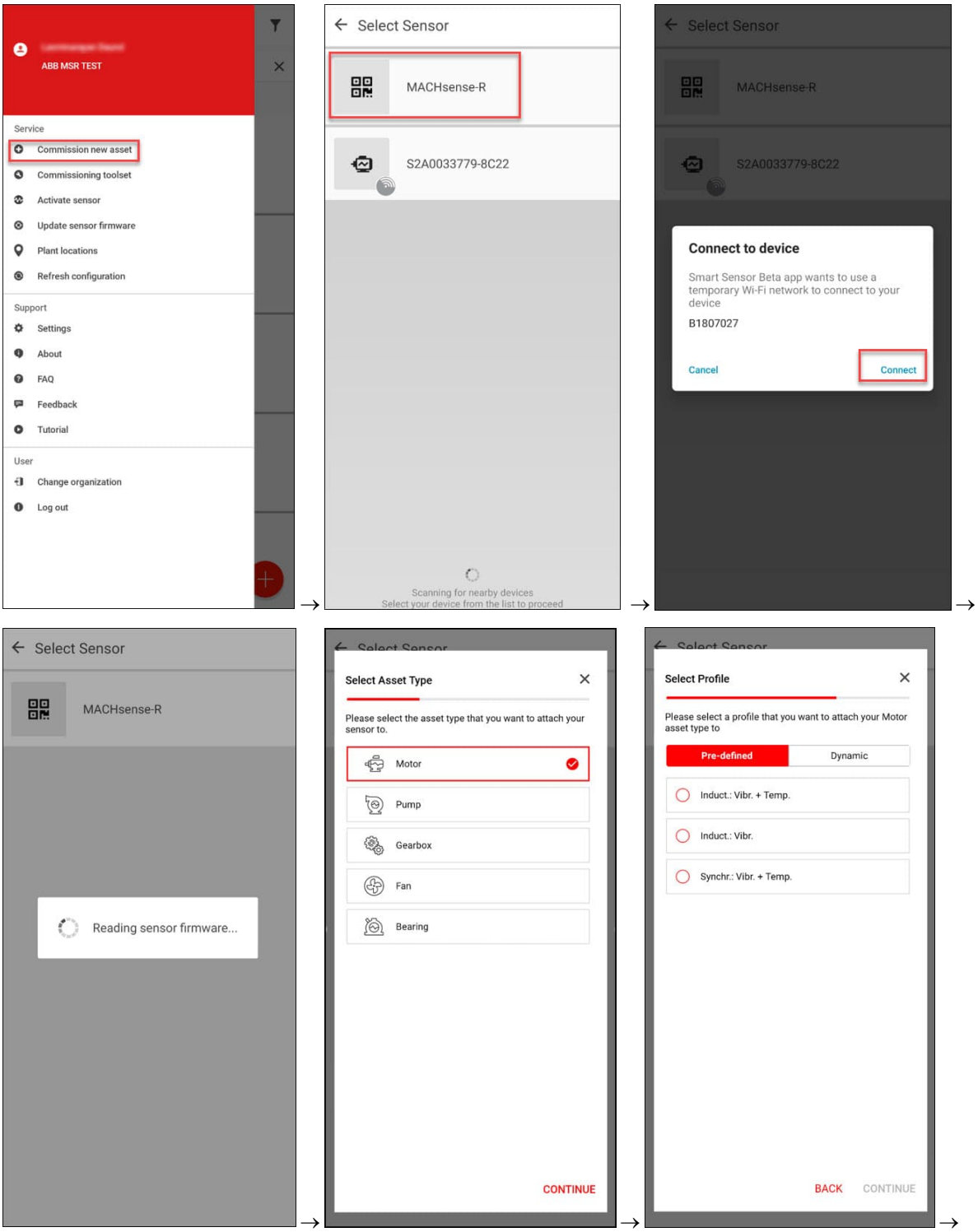
Dynamic configuration of sensors in MACHsense-R

MACHsense-R supports dynamic configuration of sensors, by which you can dynamically add sensor elements of MACHsense-R to monitor the motor but also the driven object. During the commissioning flow you can first select the asset type and then add its relevant sensors connected to the monitored asset. After commissioning the Smart Sensor portal shows the measured data of the monitored assets.

During commissioning you can add multiple asset types. For the asset type Motor, you can select either pre-defined profile, which consists of basic set of sensors needed for condition monitoring of motor, or if you prefer to dynamically add more sensor elements according to the application need. See the commissioning flow for Motor asset type in the below Smart Sensor mobile app sample screens.

See also detailed list of asset types in section *New asset types for MACHsense-R*.



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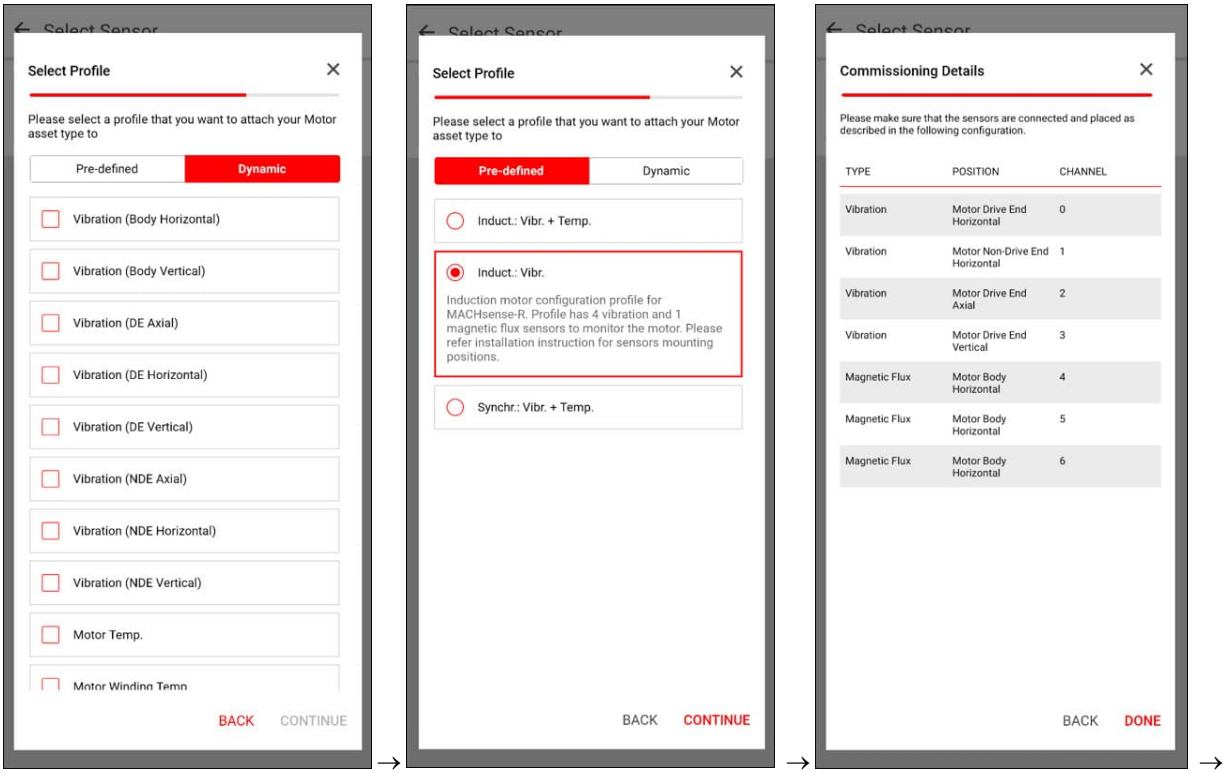

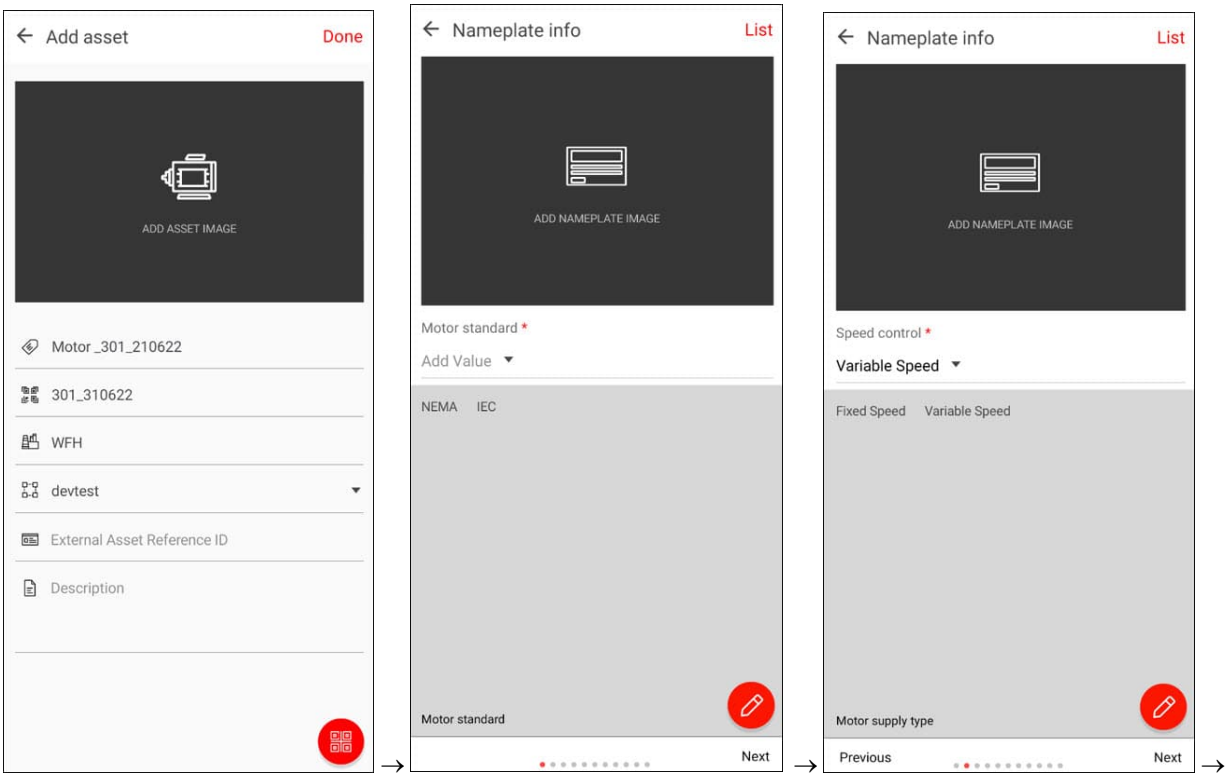

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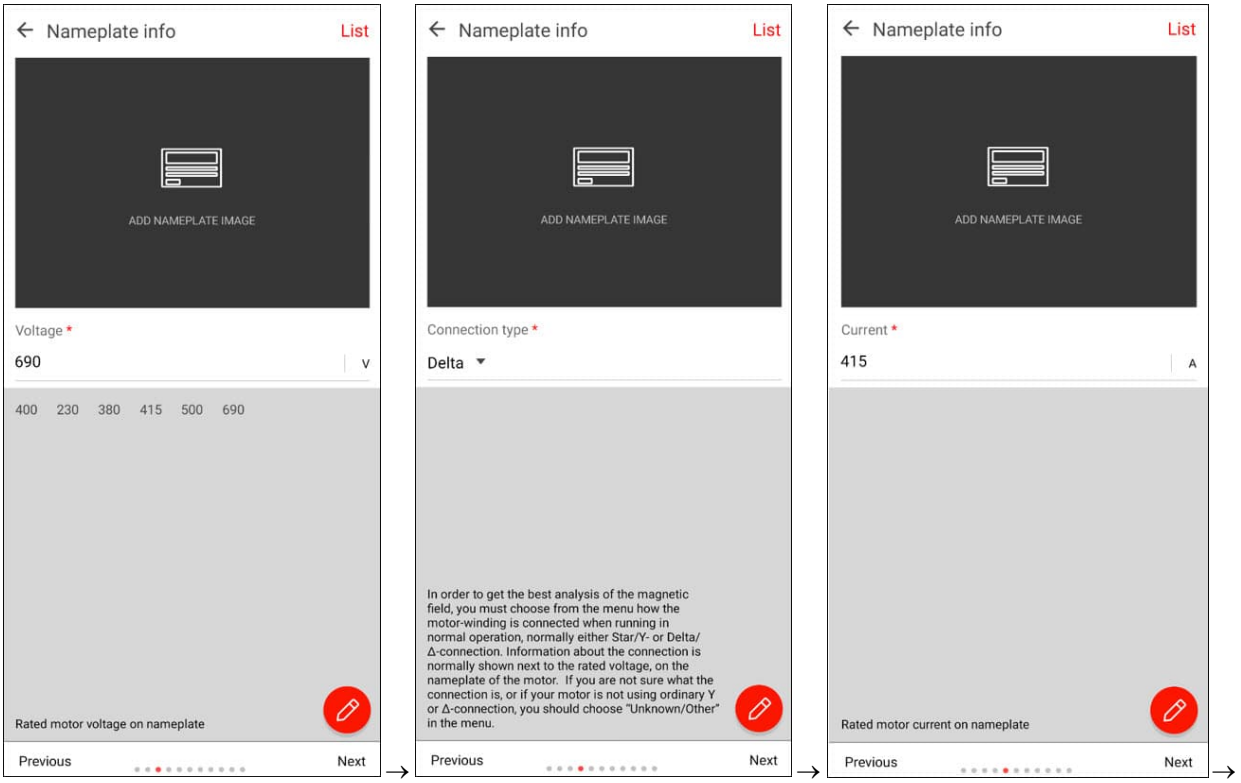

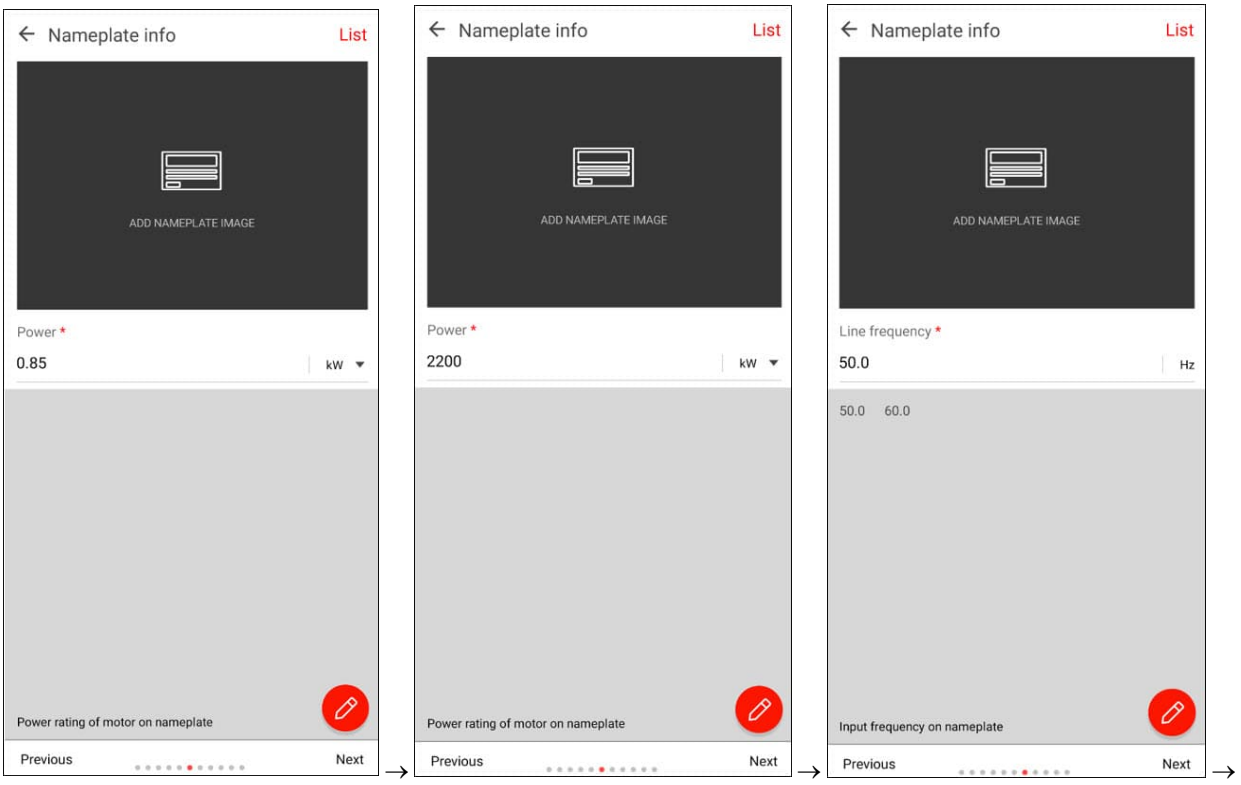

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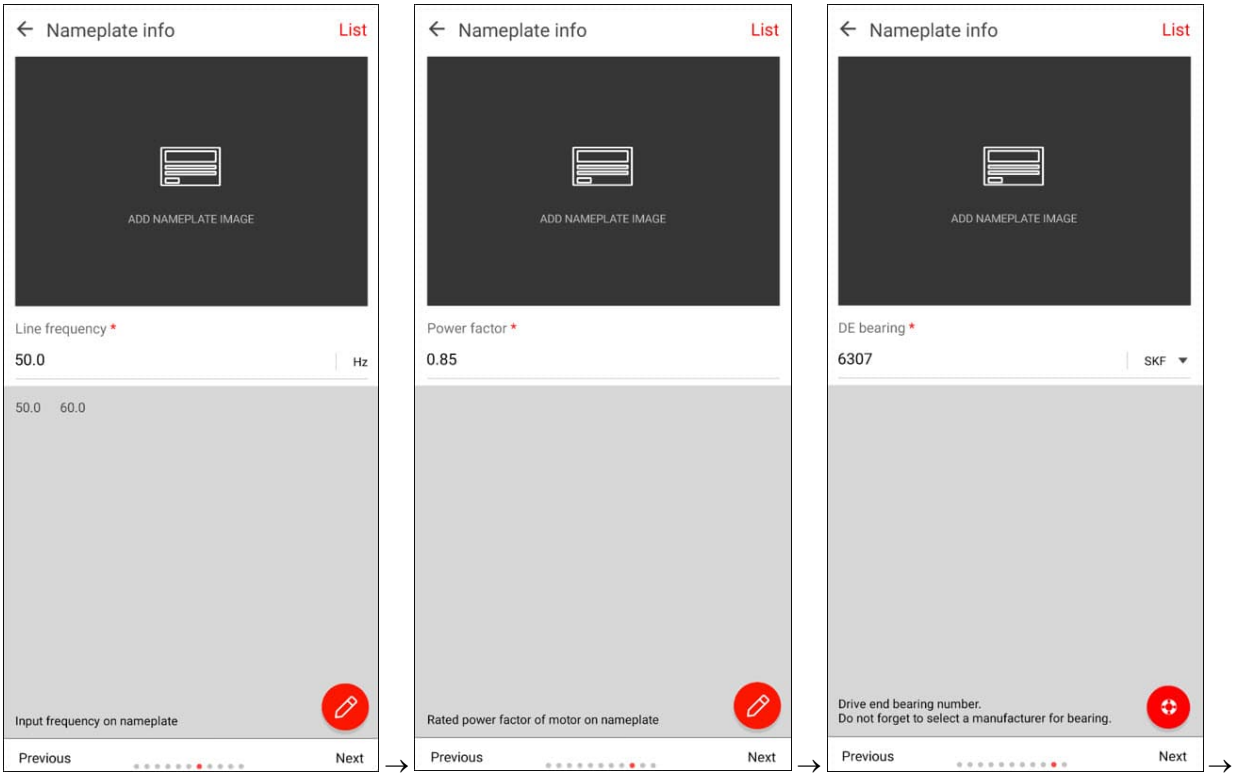

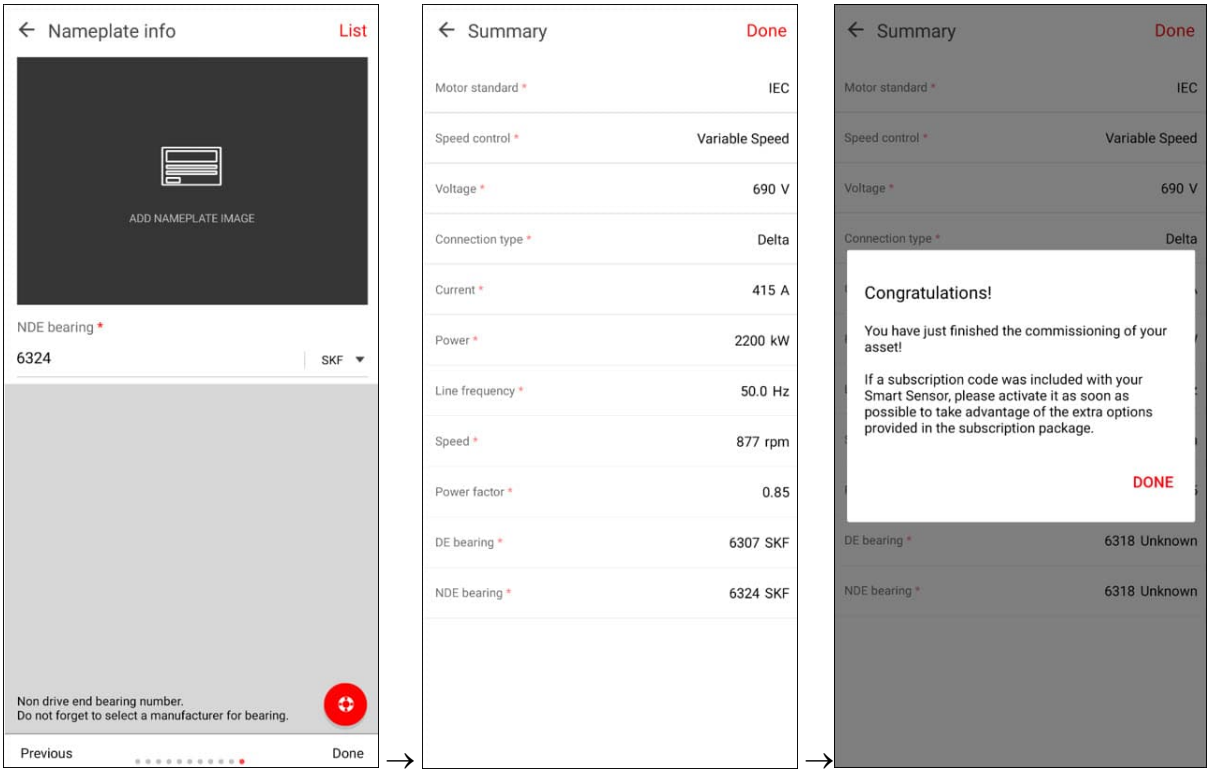

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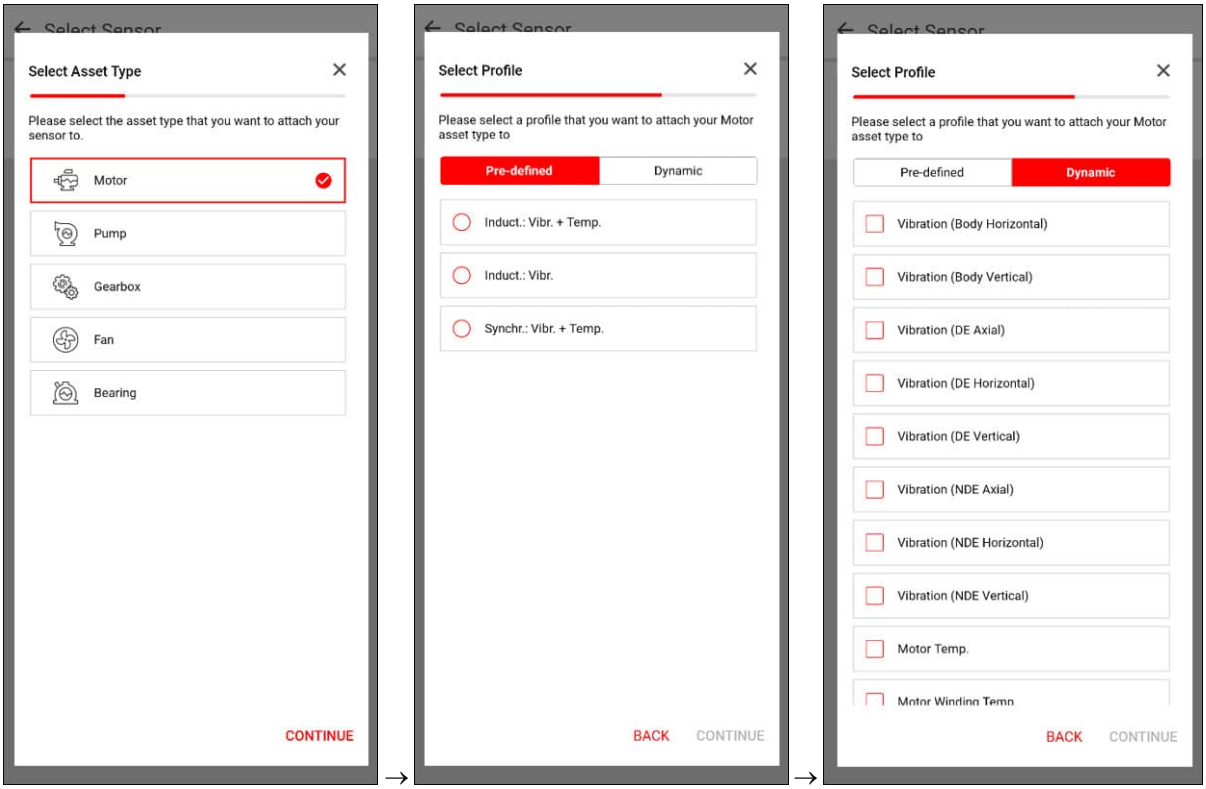
New asset types for MACHsense-R

The commissioning of MACHsense-R profile is enhanced with the addition of following new asset types, and each asset has sub-assets listed under Pre-defined and Dynamic categories. See them in below Smart Sensor mobile app sample screens.

- Motor
- Pump
- Gearbox
- Fan
- Bearing



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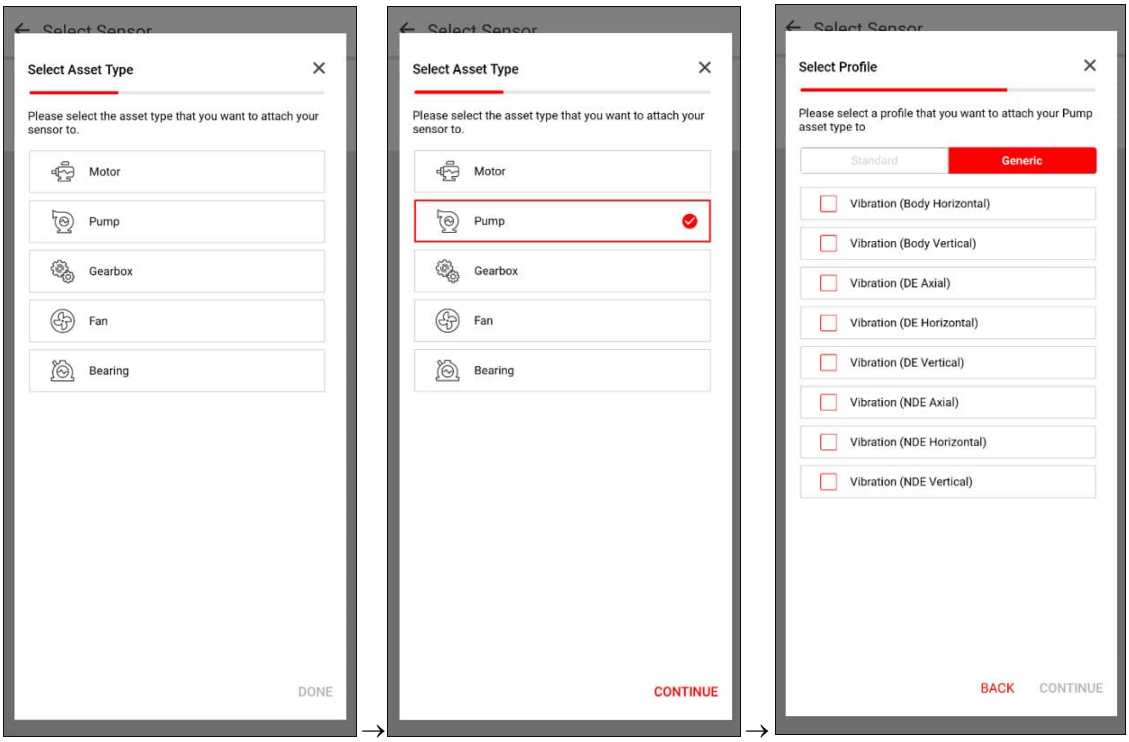

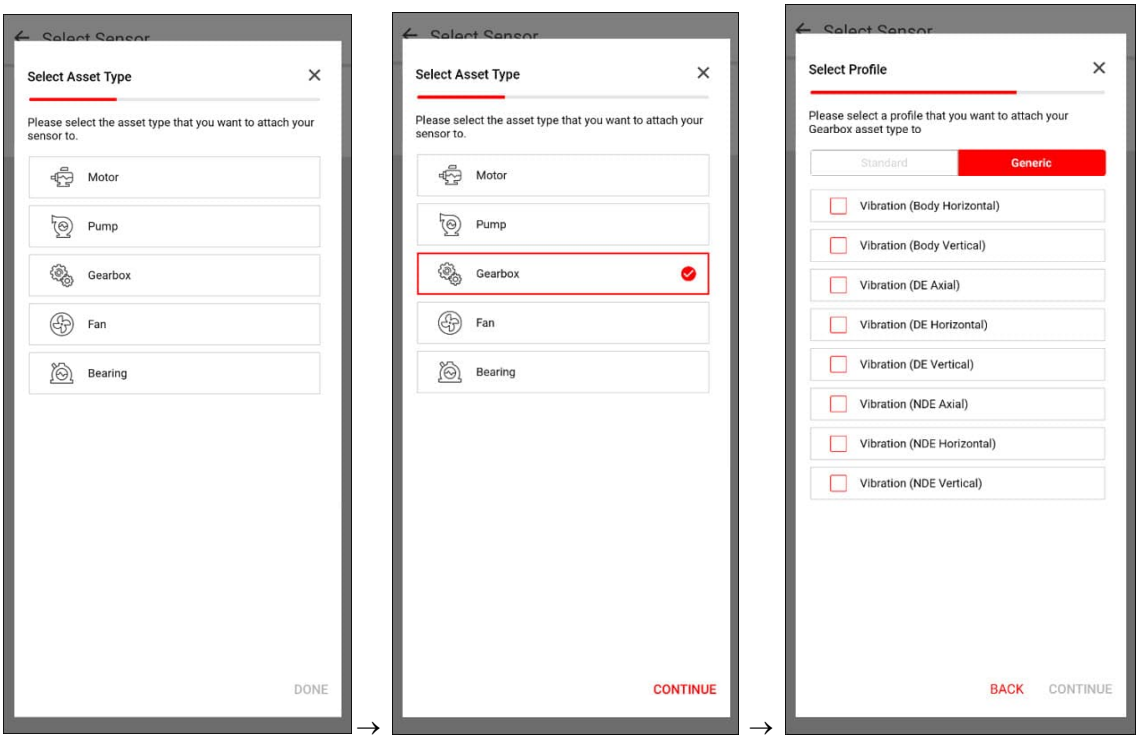

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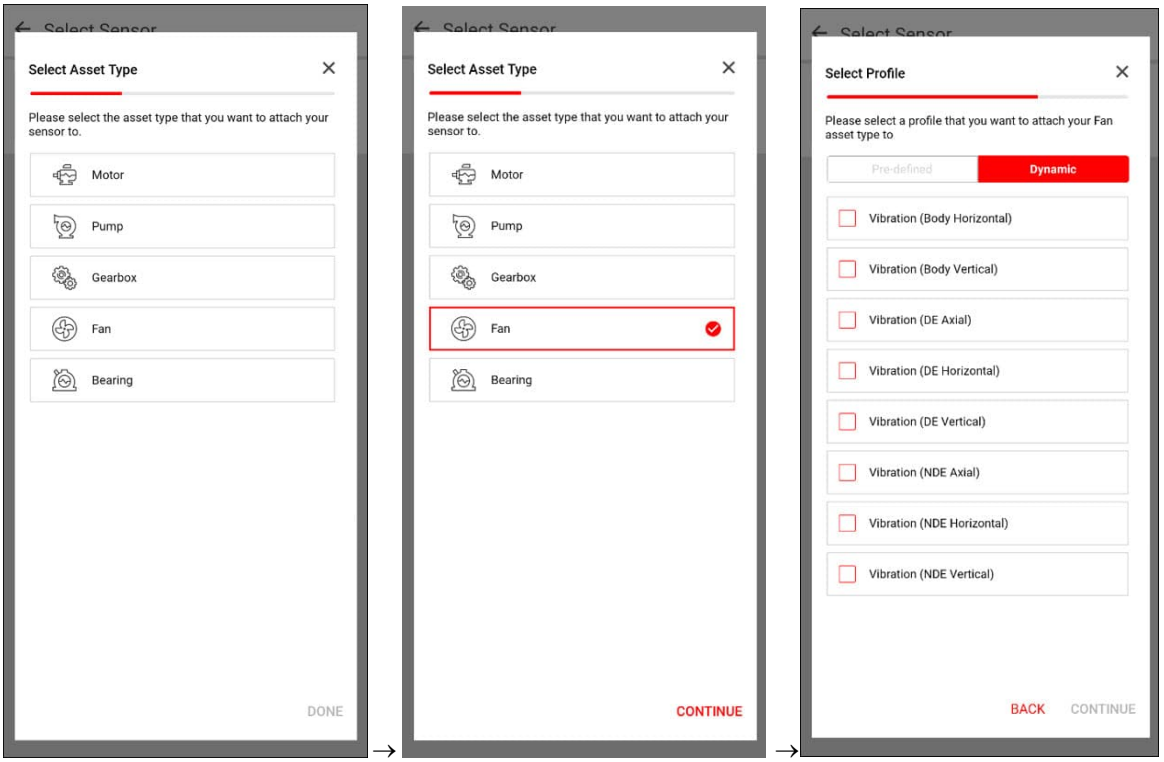

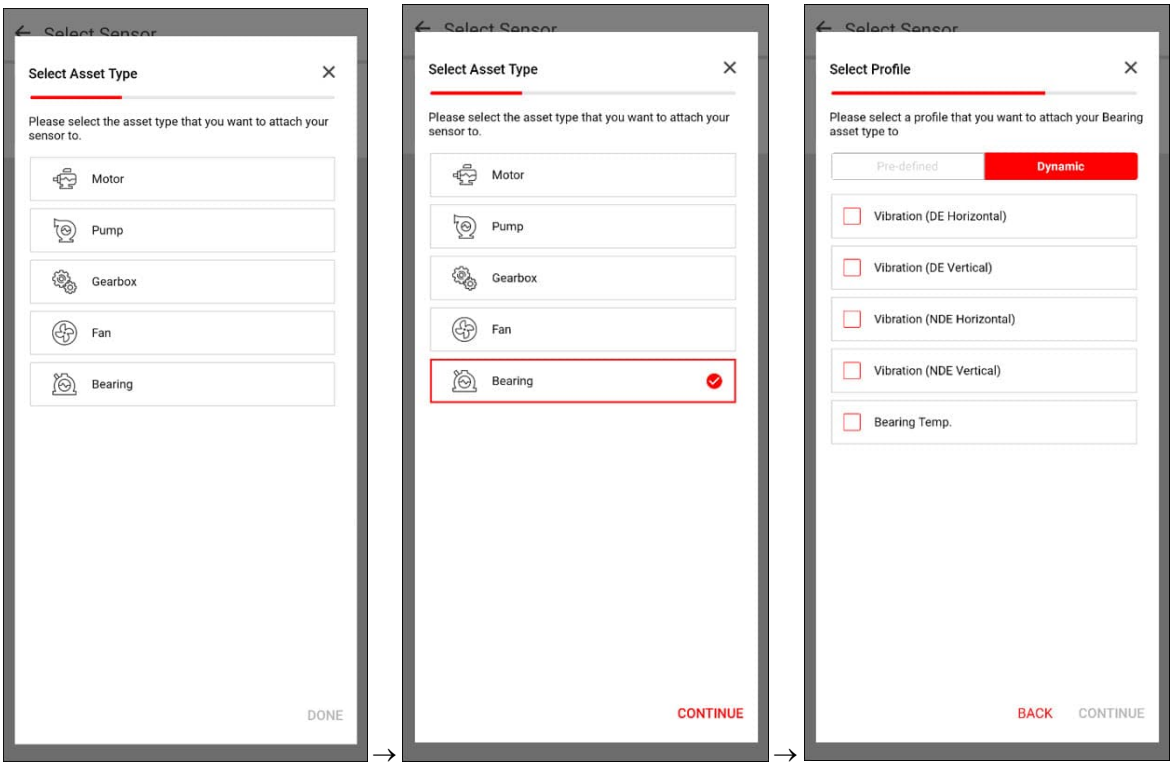

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