Details and Applications

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Sybille® - Definition

- Sybille® is a software application for **real-time forecasting** of a specific signal within a certain time period.

- Sybille® uses **pre- trained Machine Learning algorithms** able to provide the anticipated estimation of the required channels. During the application, the response is continuosly **checked** in order to **adapt** to the actual use while guatanteeing the required accurancy

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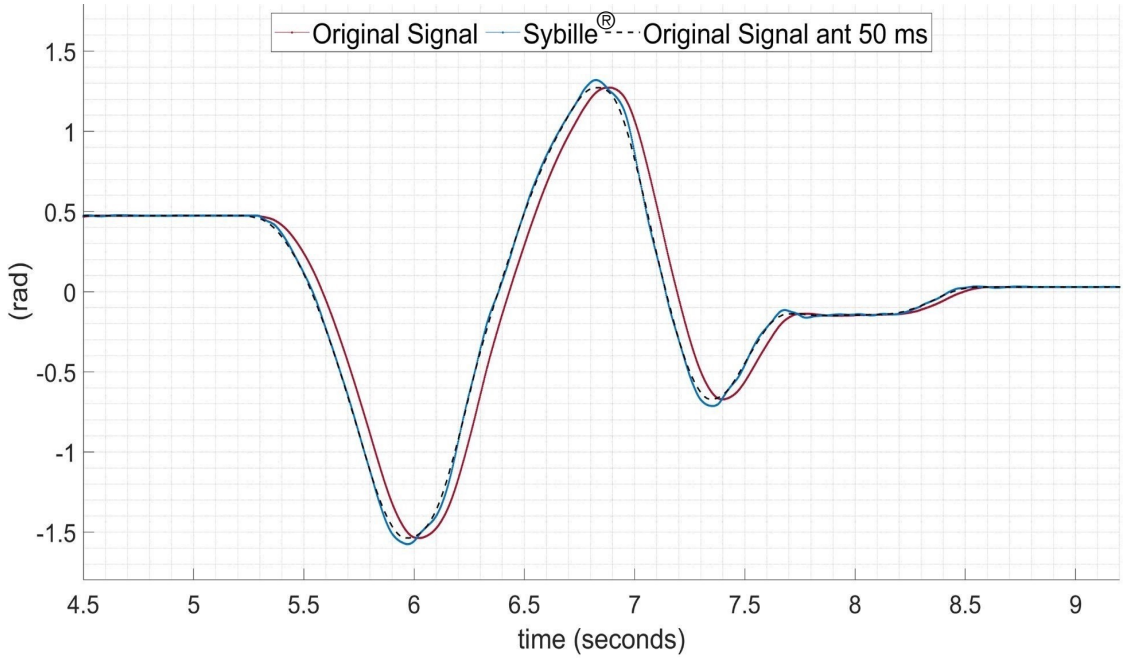
Sybille® - Exemple

STEERANGLE*

*Note: example for illustrative purpose



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Sybille® - Definition

Sybille® can be used for:

- Control Feedback
- Remote H.i.L. & S.i.L.
- Local process latency deleting

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Sybille® - Control Feedback

- For Control Feedback applications, Sybille® can be useful to foresee some feedback signals in the close-loop so that ensure a higher quality and a better dynamic response of the Control System.

- Thanks to Sybille®, a Traction Control System may anticipate its activation time, allowing a significantly smoother control with hiher performance.

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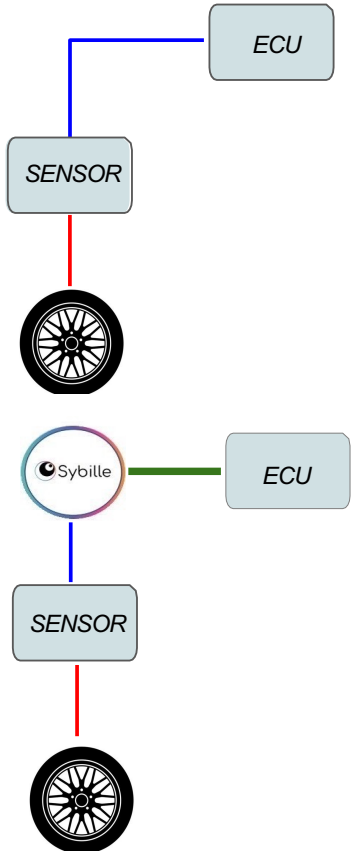
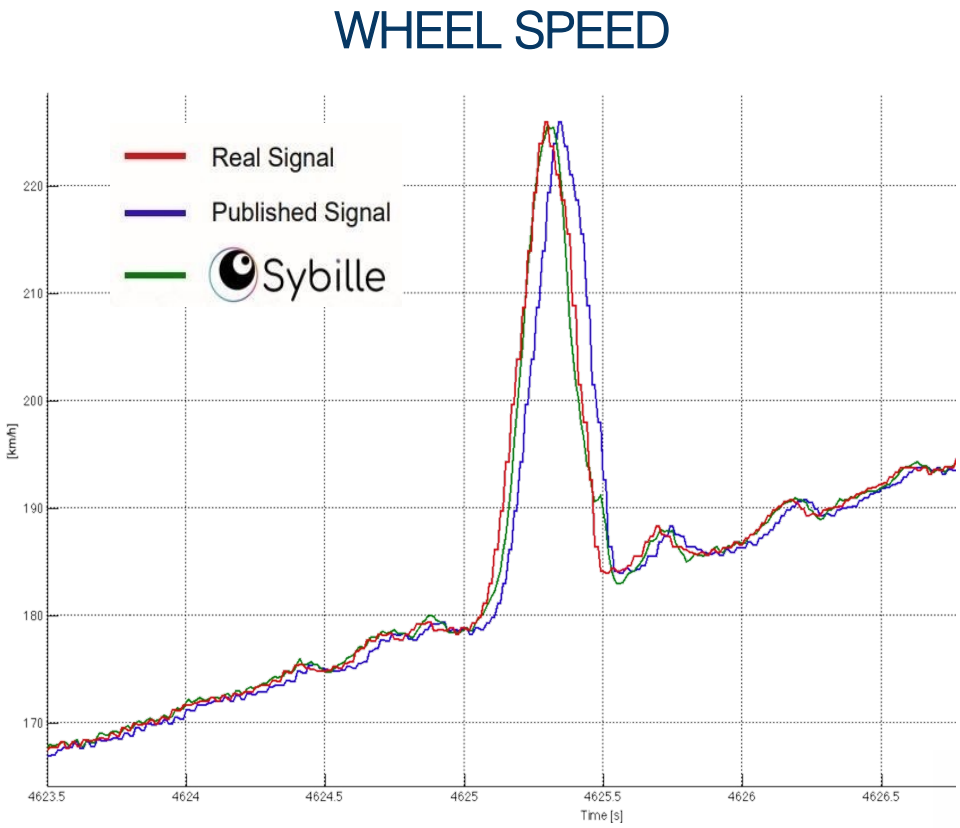
Sybille® - Control Feedback – TCS exemple





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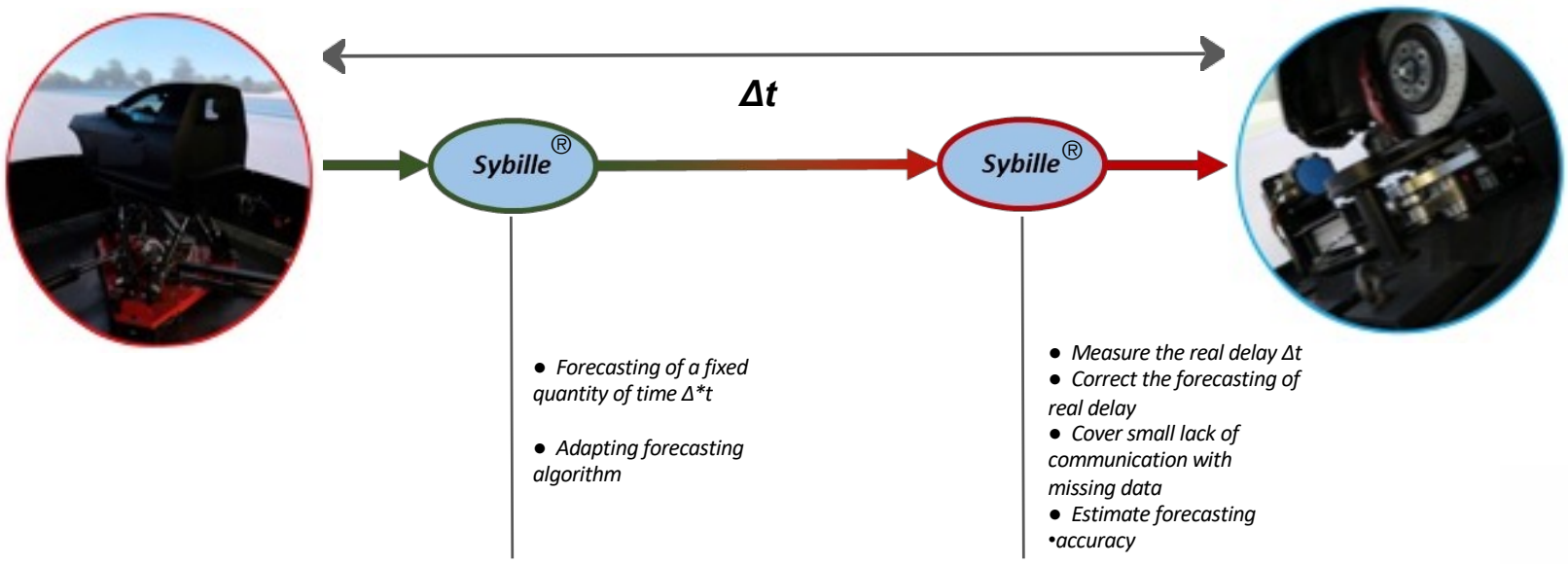
Sybille® - Remote HiL & SiL

- For HiL applications, Sybille® is placed both at the sender and receiver point of the communication branch, with different tasks.



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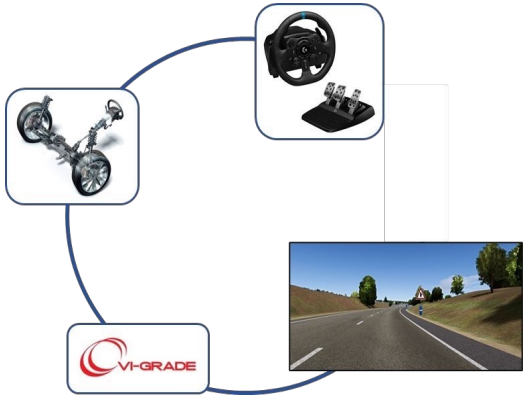
Sybille® - Remote HiL Experiment



- A round trip between two points ***requires 50 ms*** on average;
- Simulation systems are able to perform *1* ***operation per ms****;*
- A delay of ***50 ms*** creates an ***unacceptable phase shift*** between systems;
- Sybille® di AddFor can ***remove/reduce communications latencies.***

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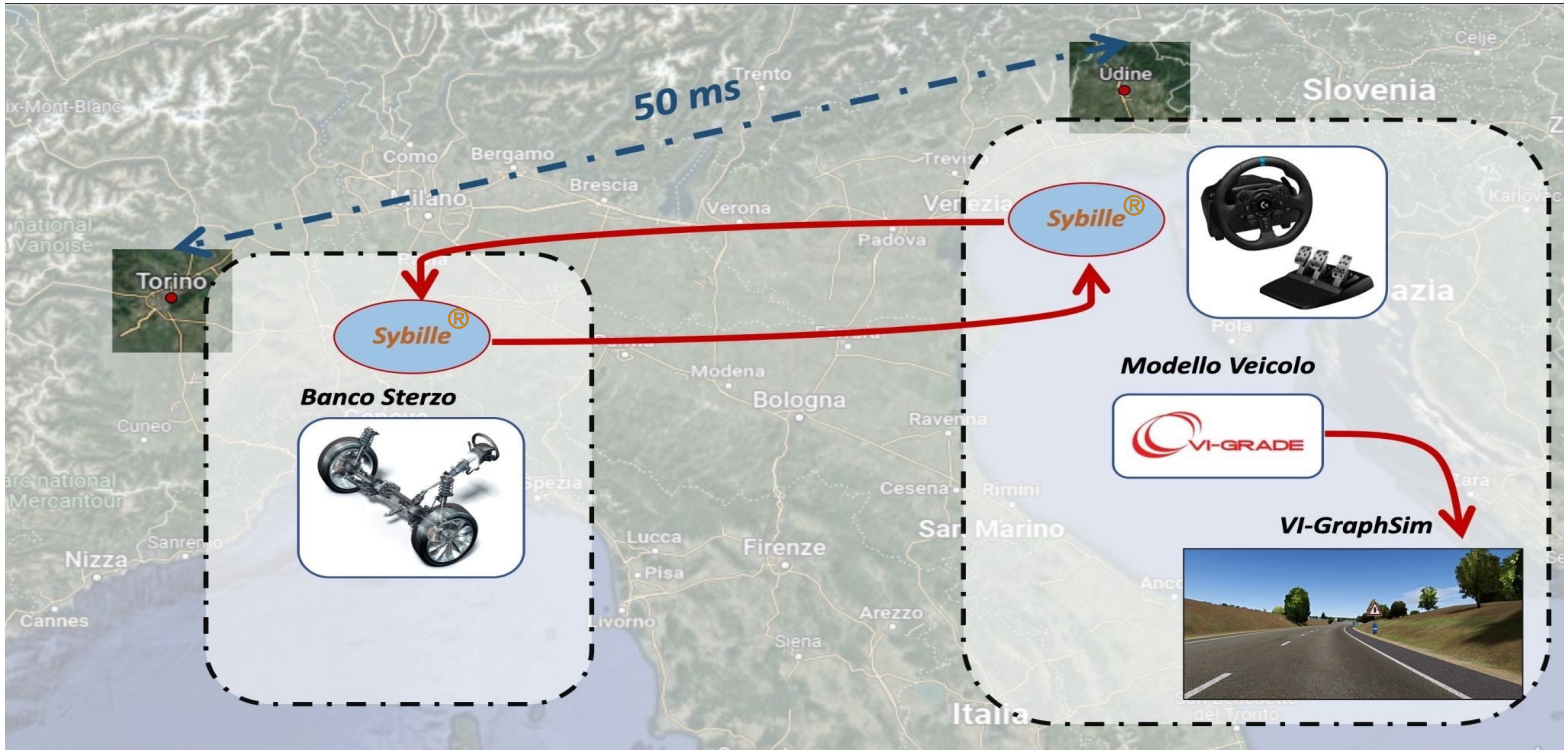
Sybille® - Remote HiL Experiment



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Sybille® - Remote HiL & SiL

The specific modifications that would need to be made to the model, and any runs that would need to be made to prepare Sybille®.

1. Adapt the VI-CRT model to accept external signal inputs (i.e. the model can be used for HiL simulations).

2. Connectivity tests need to be conducted between the connected points.

3. We will need a dataset to pre-train Sybille® ML model, detailed Inputs/Outputs and test protocol to be discussed and agreed.

4. Start applying Sybille® only to one signal as first working demonstration.

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Details and Applications

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