SICK
Sensor Intelligence.

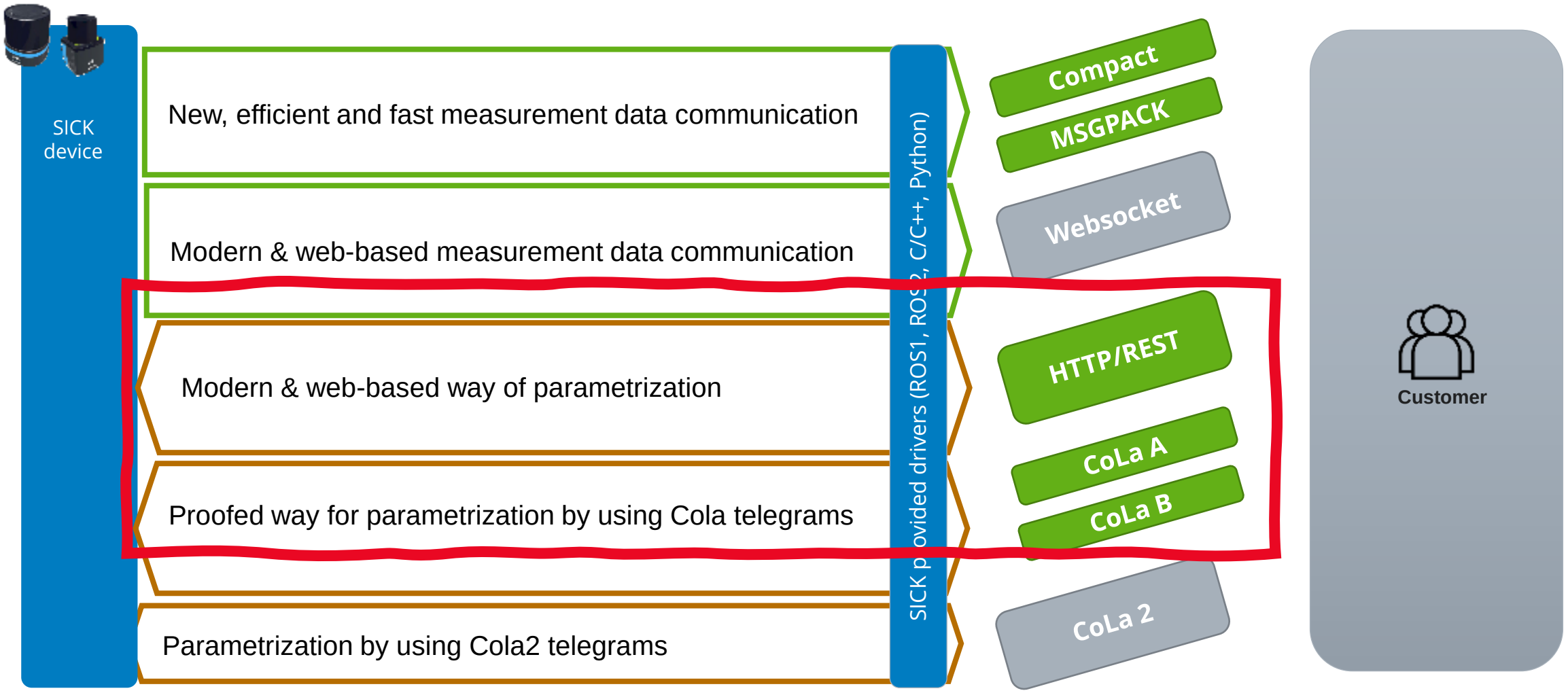
Protocol and Integration:

REST and OpenAPI

Agenda

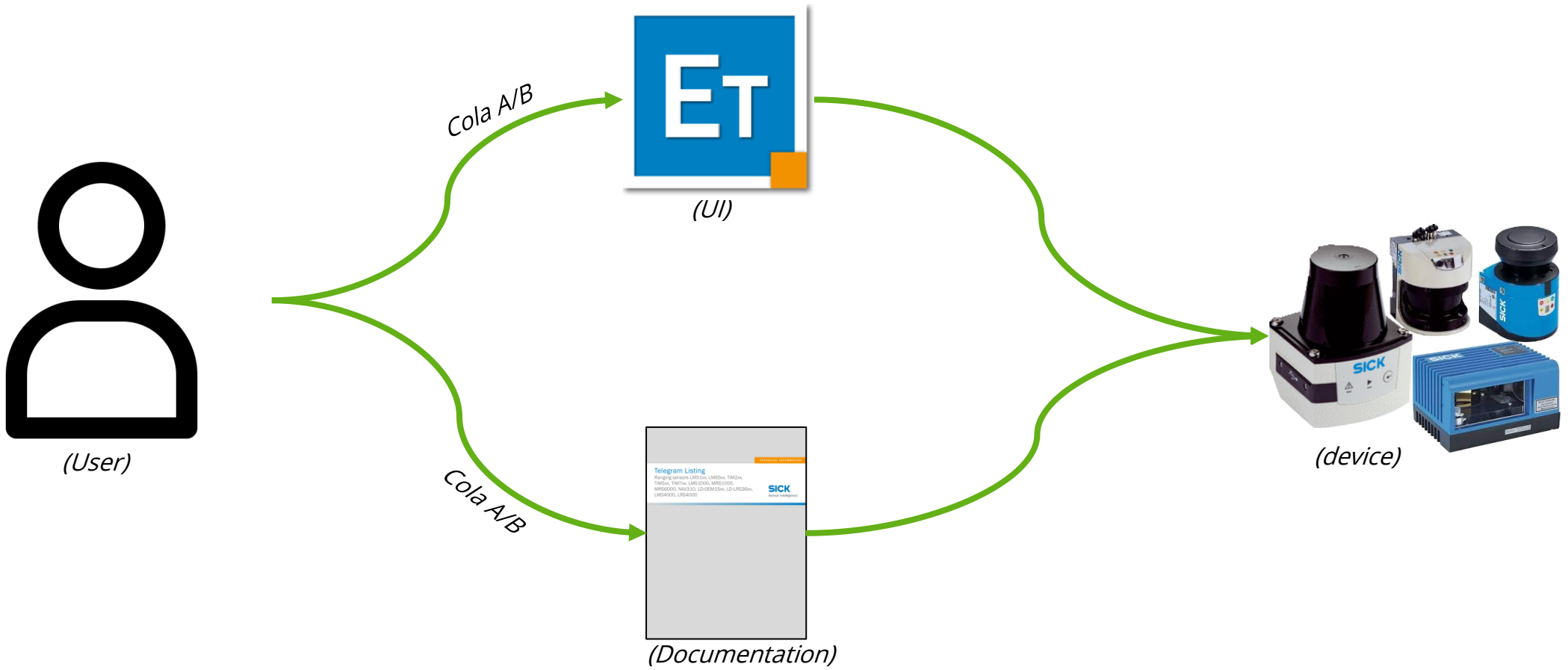
1. Where do we come from (Cola interface)?
2. What is HTTP and REST?
3. What is OpenAPI and which benefits does it bring to the table?

Given interfaces with (new) devices



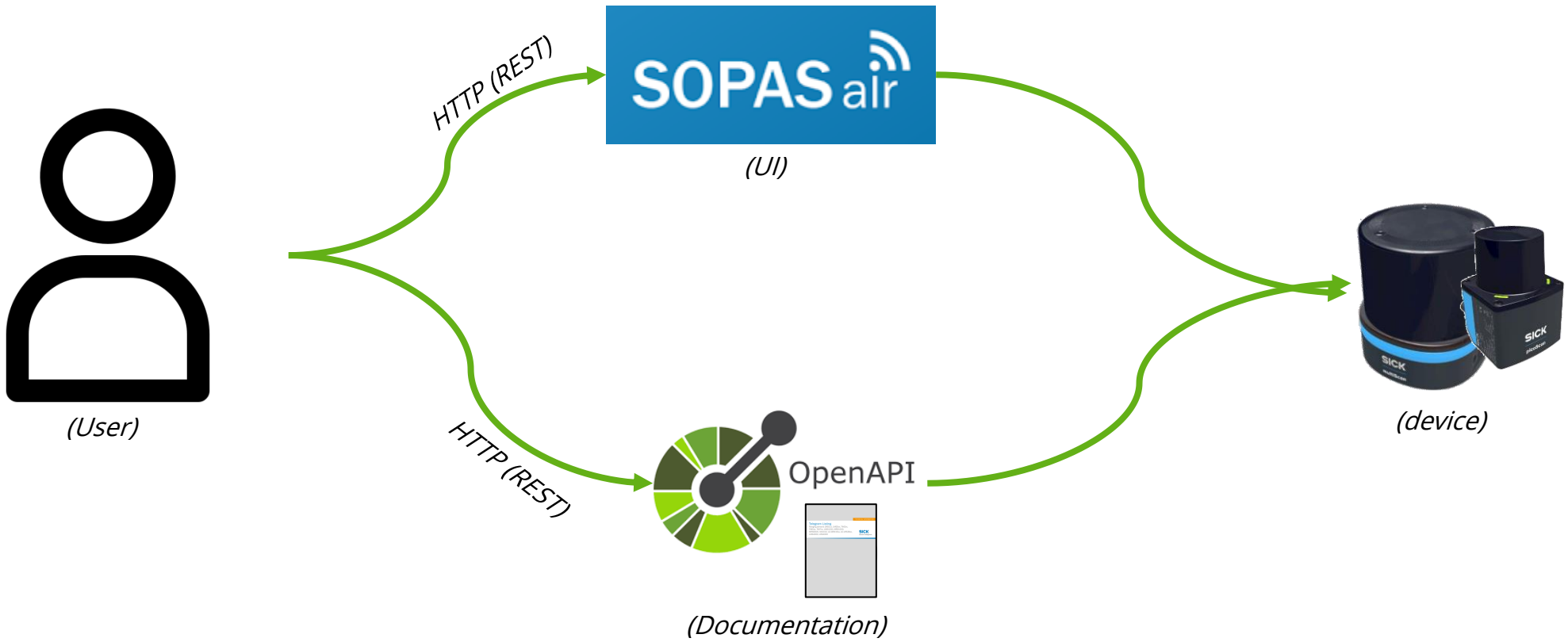
UI and Telegramm UX

Cola A/B



UI and Telegramm UX

HTTP (REST)



Dry theory ☹

HTTP (Hypertext Transfer Protocol):
- HTTP is a protocol that server and clients use to communicate on the internet.
- It's the foundation for transferring data on the web.
- About 30 years old

*(**cooking** can be chopping, frying, and baking..)*

REST (Representational State Transfer):
- REST is a set of rules for how to build and structure web services.
- REST is like a recipe for creating web applications that can talk to each other.
- About 25 years old

*(**one recipe** explains which methods & ingredients need to be used to cook a meal)*

OpenAPI (formally known as swagger):
- OpenAPI is a document that explains how a web service works.
- OpenAPI makes it easier for developers to understand and work with web services.
- About 10 years old

*(**cookbooks** guide you through recipes two mastering cooking,*

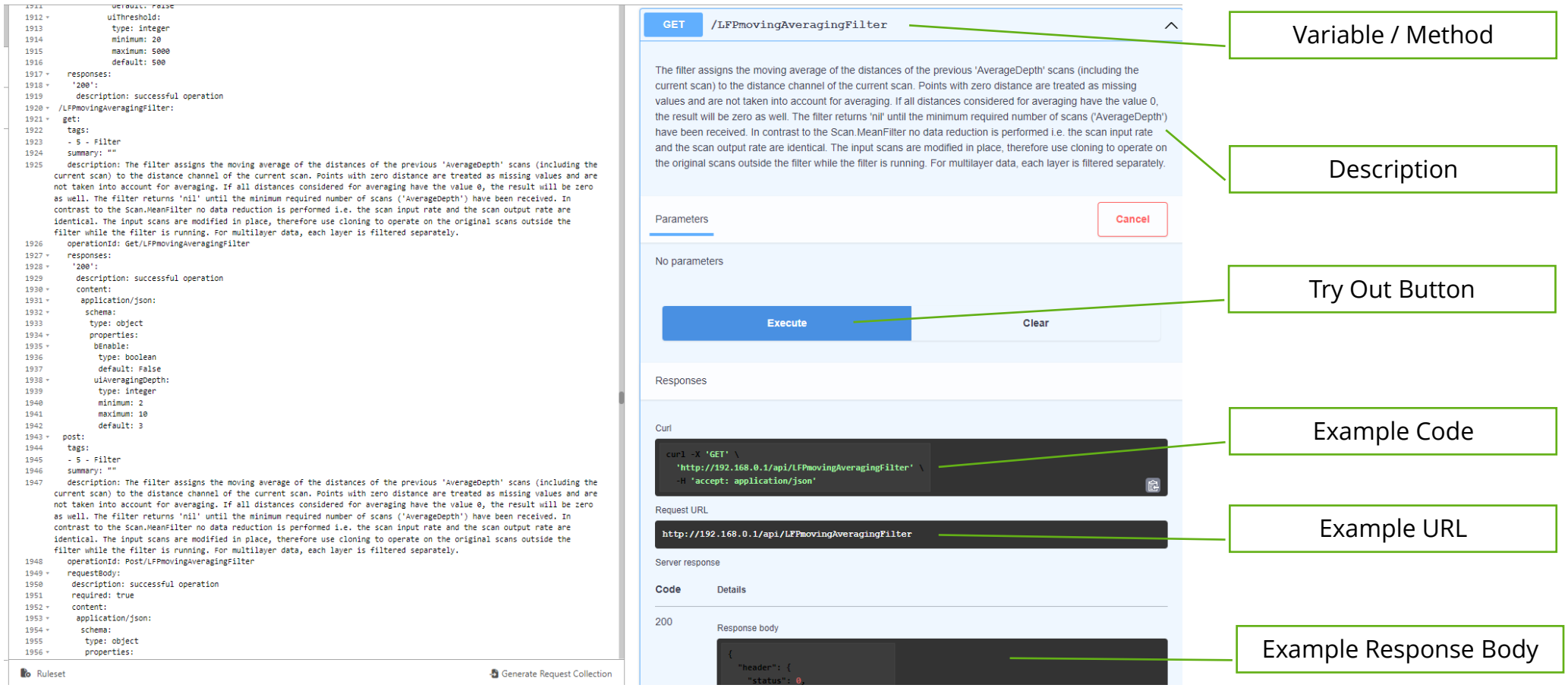
They all work together to make the web function smoothly and allow different software systems to communicate effectively.

OpenAPI

How does it look like?

YAML file representation (like a text file)

UI representation



What to compare?

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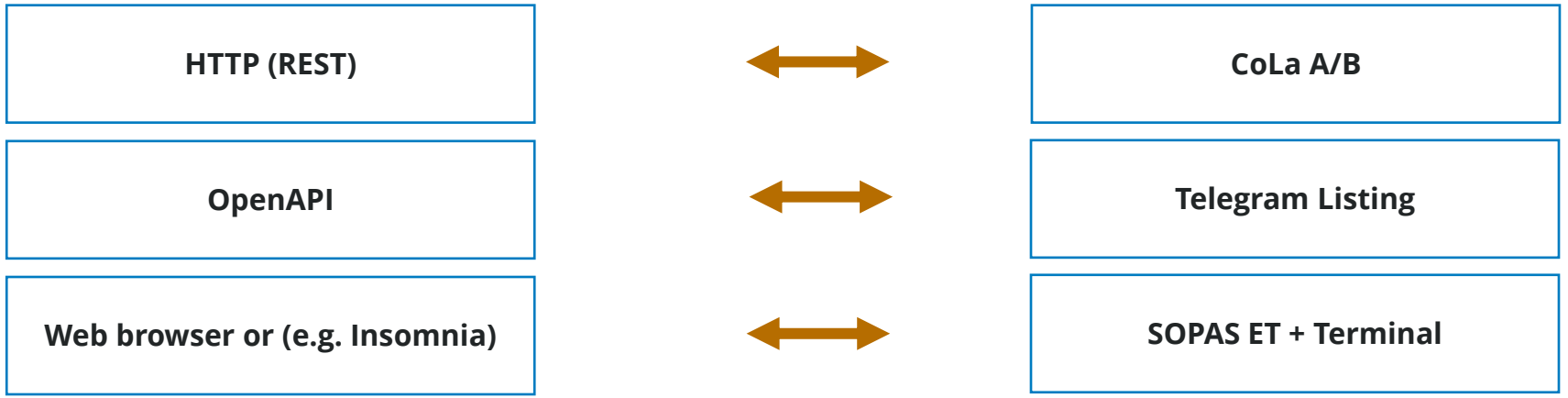

OpenAPI at Dynamic Ranging

Advantages and Information

Advantages

- Open API
  - Easy to read & use
  - Standardized specification more than 10 years old
  - Used at SICK already: FTMG, TDC-E, SIG350
  - Has a rich open-source toolset (Visualization, converters, code generation, .. https://openapi.tools/)
  - Includes examples → Documentation offers a tryout button
  - Good solution for future security standards
- HTTP
  - Is a well known, often used, non-proprietary protocol and more secure than Cola as used with Challenge and response method.

Additional Information

- Does not publish the measurement data protocol (compact, MSGPACK)
- Due to the use of HTTP, there are no events anymore
- Due to cyber security and the used Challenge and Response method write / POST methods are not so simple anymore → Python example in development
- It is used by multiple customers