FOR
IDENT

„Free your data'

Concepts of direct data transfers

11.11.2015

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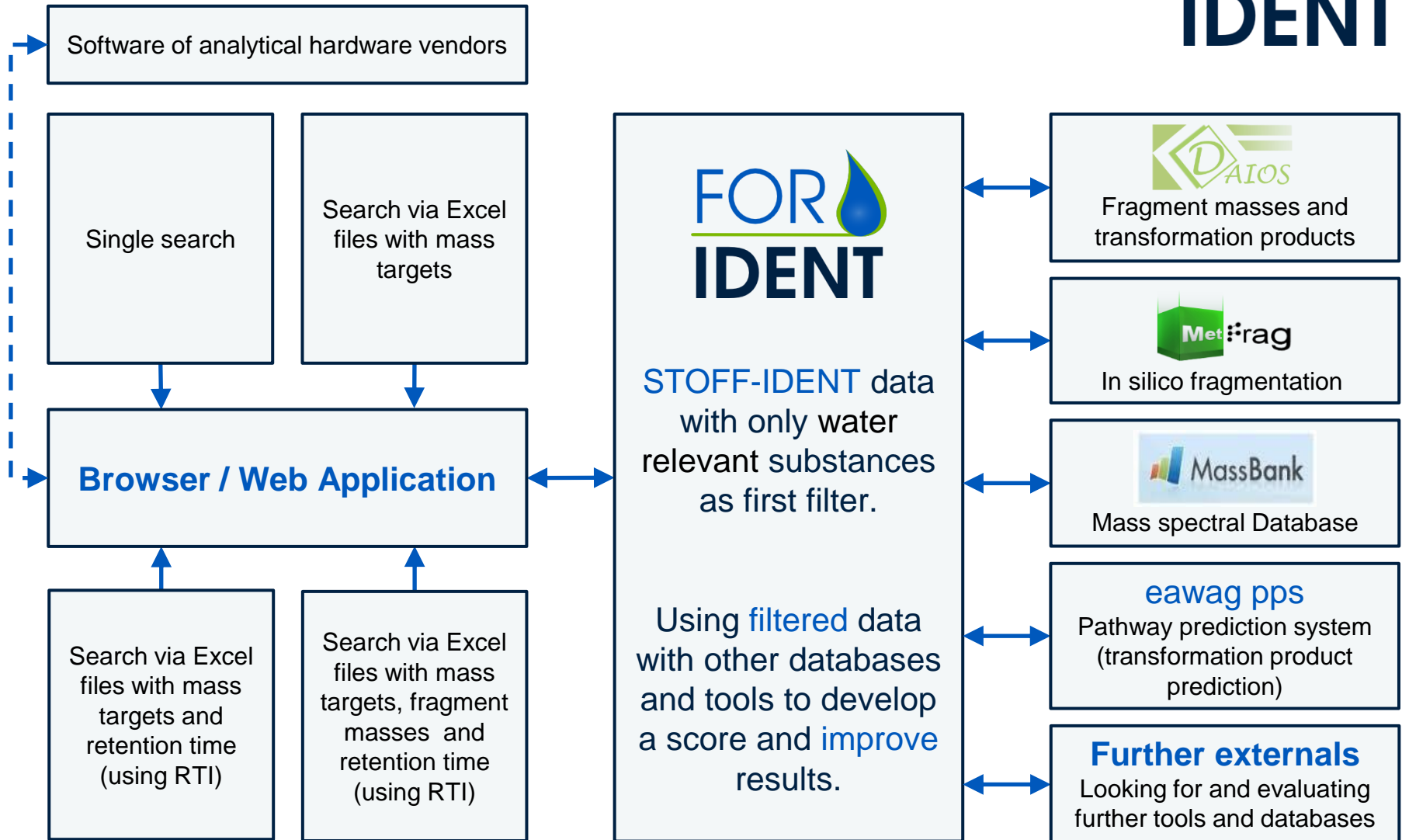frank.leßke@hswt.de

Concepts

- Aim: Enable simple data import into a web-application without using a temporary export e.g. Excel
- Scenario: Open a web browser and and transfer data into a web-application
- Unidirectional communication between a desktop and web-application
  - Using HTTP GET (1)
  - Using HTTP POST (2)

Software of analytical hardware vendors	→	Browser / Web Application

- Bidirectional communication between desktop and web-application (3)

Software of analytical hardware vendors	↔	Browser / Web Application

- Three selected concepts - more valid approaches possible...

(1) Using HTTP GET

- http://www.for-ident.org**?mass=435.5188&formula=C24H29N5O3&...**

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↓

Generate Link with data

↓

Open Browser on local Operating System

↓

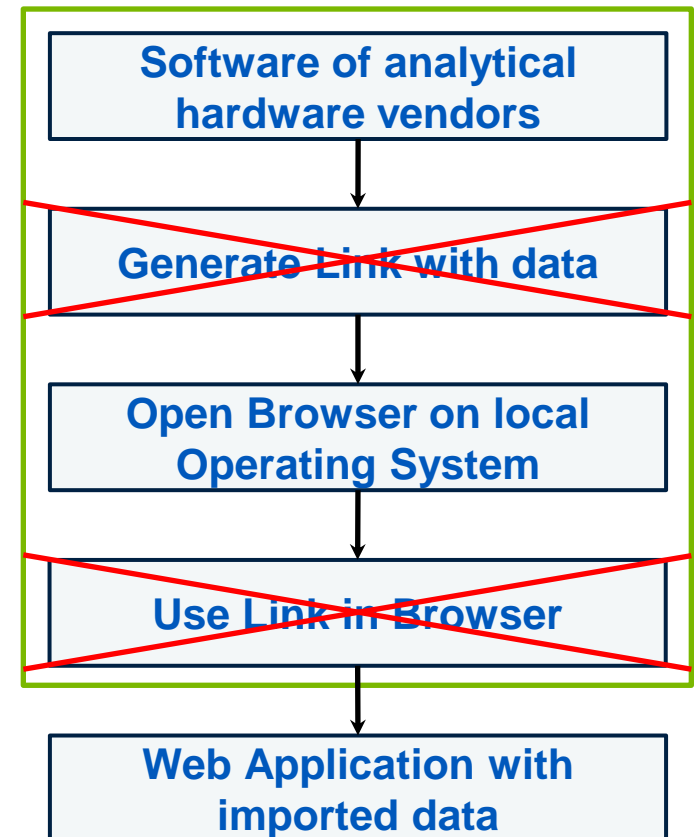| Use Link in Browser |
|---|

↓

Web Application with imported data
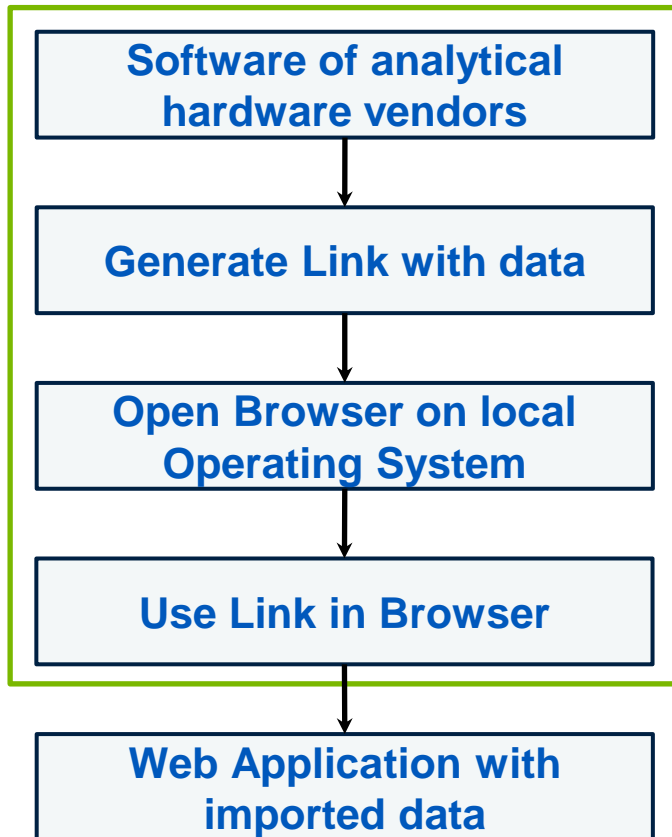
- Length of the URL restricted by browser
  - e.g. IE 1000 characters

- Not enough for the expected data

- Conclusion
  - Simple implementation
  - Not suitable for our requirements

(2) Using HTTP POST

- Advantages POST
  - No data limitation
  - Text and binary data

- Problem:
  - Open browser and send POST request
  - Not possible like using GET
  - No support from the browsers
  - Session handling limits the possibilities

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~~Generate Link with data~~
Open Browser on local Operating System
~~Use Link in Browser~~
Web Application with imported data

- ~~http://www.for-ident.org~~**?mass=435.5188&formula=C24H29N5O3&...**

(2) Using HTTP POST - the detour

```
┌─────────────────────────────────┐
│  ┌───────────────────────────┐  │
│  │   Software of analytical  │  │
│  │     hardware vendors      │  │
│  └───────────────────────────┘  │
│               │                 │
│               ▼                 │
│  ┌───────────────────────────┐  │
│  │  Read template html file  │  │
│  └───────────────────────────┘  │
│                                 │
│                                 │
│                                 │
└─────────────────────────────────┘
```

(2) Using HTTP POST – Template HTML

```html
<!DOCTYPE html>
<html>
    <head>
        <script src="execute.js"></script>
    </head>
    <body onload="post('http://www.for-ident.org/',
        {__data__});">
    </body>
</html>
```
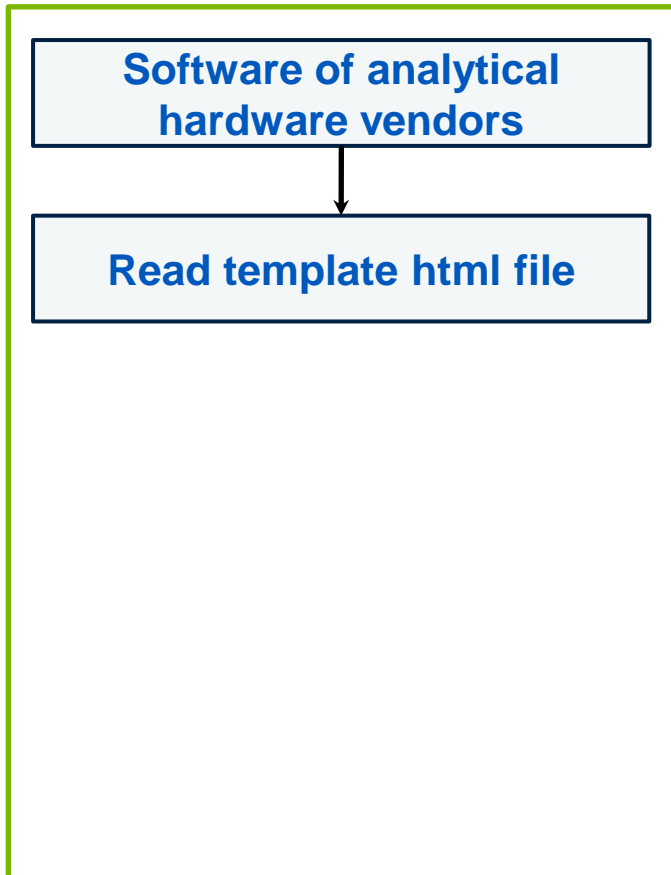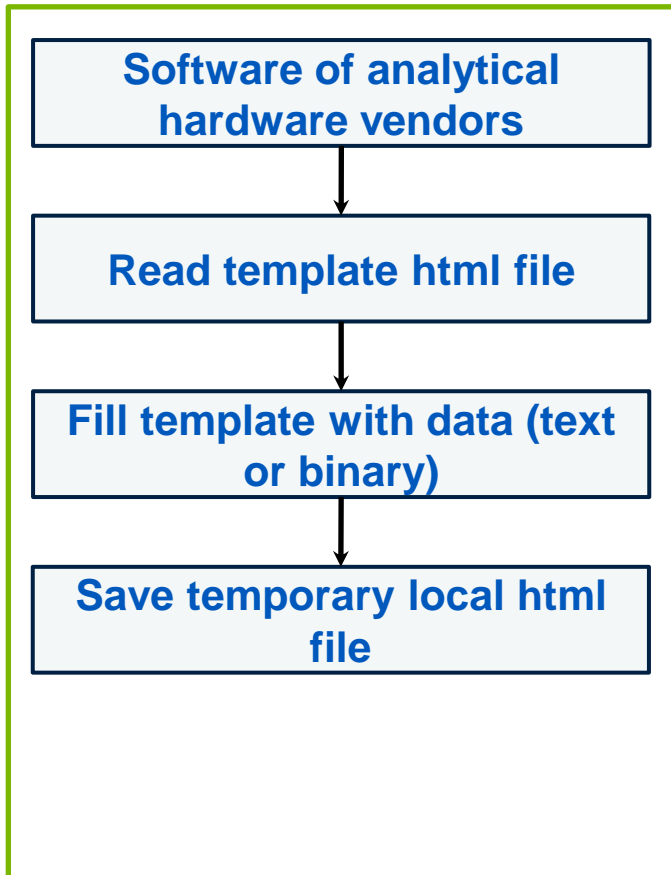
(2) Using HTTP POST - the detour

```
┌─────────────────────────────────────┐
│   ┌───────────────────────────────┐  │
│   │   Software of analytical       │  │
│   │   hardware vendors             │  │
│   └───────────────────────────────┘  │
│                   │                    │
│                   ▼                    │
│   ┌───────────────────────────────┐  │
│   │   Read template html file      │  │
│   └───────────────────────────────┘  │
│                   │                    │
│                   ▼                    │
│   ┌───────────────────────────────┐  │
│   │   Fill template with data (text │  │
│   │   or binary)                   │  │
│   └───────────────────────────────┘  │
│                   │                    │
│                   ▼                    │
│   ┌───────────────────────────────┐  │
│   │   Save temporary local html    │  │
│   │   file                         │  │
│   └───────────────────────────────┘  │
│                                       │
└─────────────────────────────────────┘
```

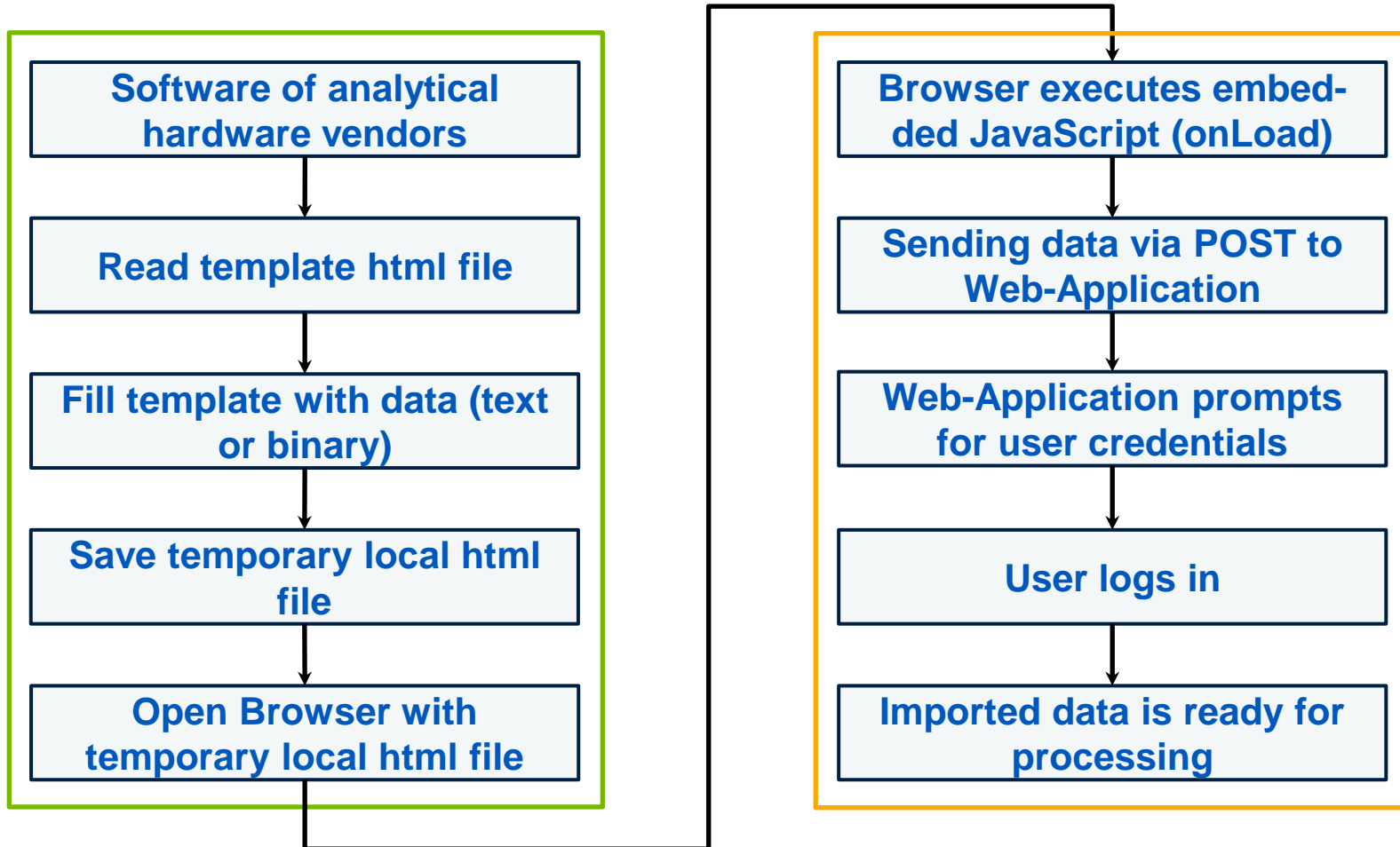# (2) Using HTTP POST – Executing HTML

```html
<!DOCTYPE html>
<html>
    <head>
        <script src="execute.js"></script>
    </head>
    <body onload="post('http://www.for-ident.org/',
        {mass: '435.5188', formula: 'C24H29N5O3', ...});">
    </body>
</html>
```
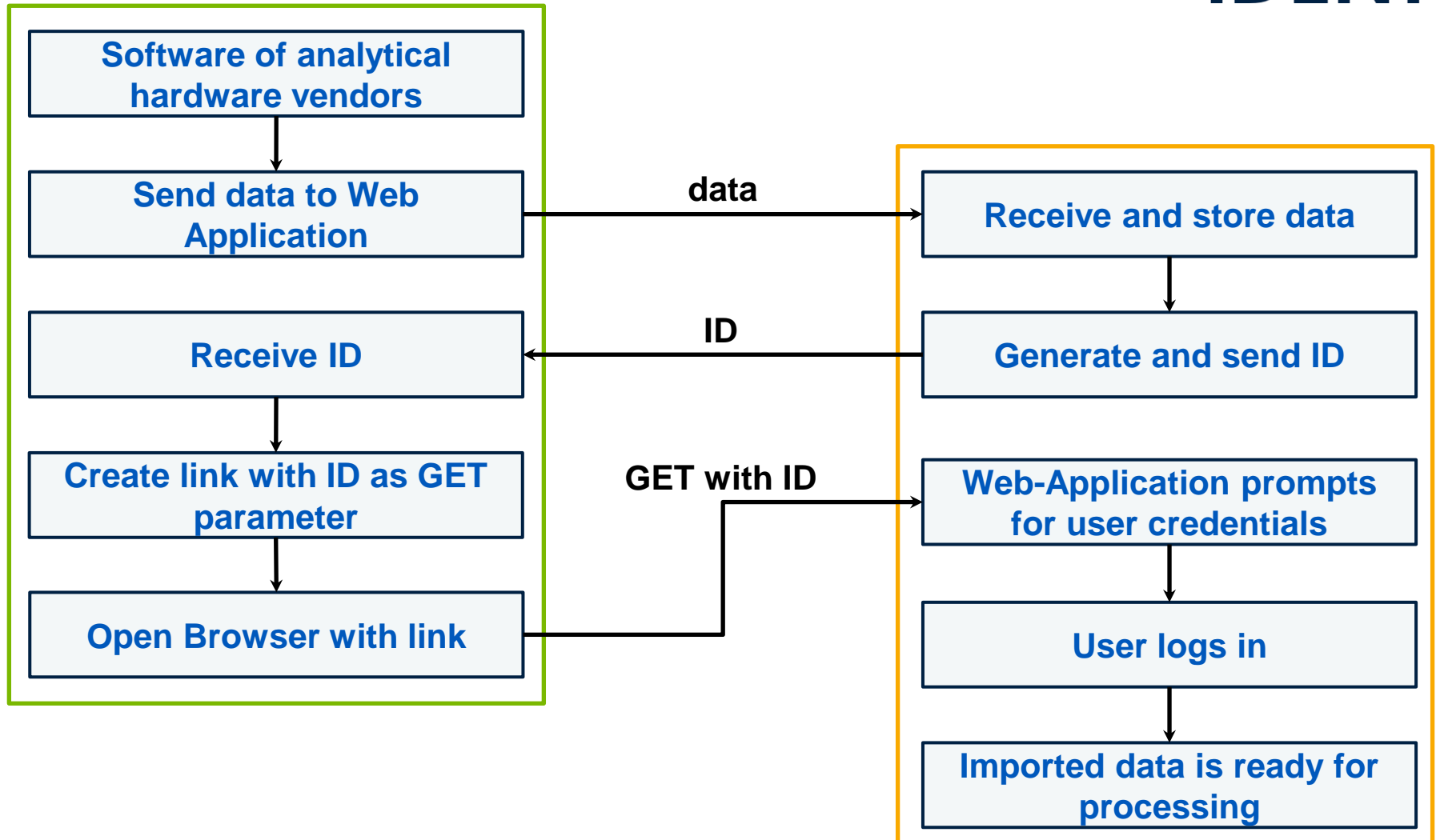
(2) Using HTTP POST - the detour

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Read template html file

Fill template with data (text or binary)

Save temporary local html file

Open Browser with temporary local html file

Browser executes embedded JavaScript (onLoad)

Sending data via POST to Web-Application

Web-Application prompts for user credentials

User logs in

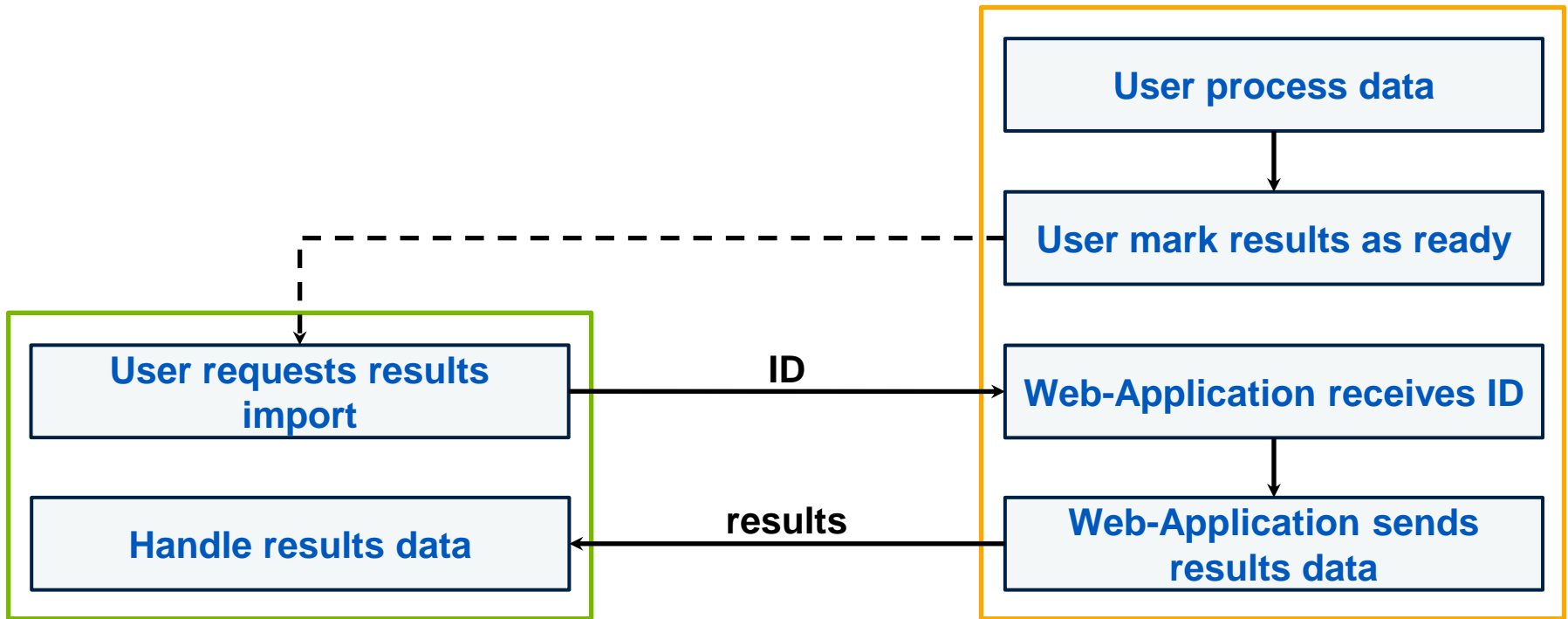**Imported data is ready for processing**

(2) Using HTTP POST – Conclusion

- No data limit - suitable for our requirements

- Not limited to FOR-IDENT

- Data requirements can be defined in a template

- Read file and manipulate easily implemented

- But more effort than GET (1)

- JavaScript necessary

(3) Bidirectional communication – Import data

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Send data to Web Application

Receive ID

Create link with ID as GET parameter

Open Browser with link

data

ID

GET with ID

Receive and store data

Generate and send ID

Web-Application prompts for user credentials

User logs in

Imported data is ready for processing

(3) Bidirectional communication – Export data

		User process data
		↓
		User mark results as ready
User requests results import	ID →	**Web-Application receives ID**
		↓
Handle results data	← results	**Web-Application sends results data**

(3) Bidirectional communication– Conclusion

- No data limit - suitable for our requirements

- Not limited to FOR-IDENT

- Bidirectional communication – Results flow directly back

- Technically complex

- Many technical possibilities of communication - complex and error-prone

- High costs in the implementation on both sides

Summary

- (1) GET
  - Minimal effort
  - Severely limited due to the small amounts of data
  - Unidirectional communication
- (2) POST
  - Defensible expense (file manipulation and program start)
  - Flexible (easily adaptable to other Web applications)
  - Dataset is not a limiting factor
  - Unidirectional communication
- (3) Bidirectional Communication
  - Biggest effort
  - Greatest benefit for users
  - High complexity => many pitfalls => many sources of error

Conclusion

Recommendation

(2) POST

Pragmatic approach

"Quickly" realized

Established technologies

Little Unknown

Thank you for your attention