# Extended interface of FPBL

Extended interface of FPBL serves to support new features of Coursa Venue such as crowdsourcing and others.

## Command line keys od FP\_Builder

Command line format: FP\_builder.exe -- settings venue.json [--key key\_value]

#### settings

The command specifies json file which contains FP\_builde settings.

Usage: FP\_builder -- settings venue.json

#### ignore\_list

The command specifies json file which contains ignore and white lists for WiFi and BLE fingerprints and proximity database.

Usage: FP\_builder -- settings venue.json --ignore\_list ignore\_list.json

#### xblp\_detection

The command activates special FP\_builder mode for procedure of incorrect proximity beacon placement detection.

Usage: FP\_builder -- settings venue.json -- xblp\_detection on

#### input\_list

The command disables automatic search for datasets in location provided with setting “folder\_in” of venue.json. FP\_builder utilizes datasets provided in dataset\_list.json only.

Usage: FP\_builder --input\_list dataset\_list.json

file\_name.json – json file with list of datasets to be processed.

#### self\_healing

The command activates special FP\_builder mode for wifi self-healing procedure.

Usage: FP\_builder -- settings venue.json -- self\_healing on

Datasets input list

Datasets list can be provided in json file specified with --input\_list key as list of dataset folders with attributes.

The structure of datasets input list is the following:

"datasets\_list":

[

["dataset\_path\_1", "attrib1"],

. . .

["dataset\_path\_i"],

. . .

["dataset\_path\_n”, "attrib\_1", "attrib\_2",…"attrib\_n"]

]

Where every dataset\_path specifies path to the dataset folder. The folder should contain

attrib\_1 - attrib\_n – list of attributes and keys which are applied to the dataset processing.

The following attributes are supported:

|  |  |  |
| --- | --- | --- |
| **Dataset attribute** | **Data Source** | **Comments** |
| “venue\_data” | Coursa Venue + IVL | Specifies dataset as crowdsourcing data |
| “survey\_data” | Coursa Survey + IRL | Specifies dataset as survey data collected with Coursa Survey |
| “maper\_data” | Mapper + tpn converter | Specifies dataset as Mapper data |
| “retail\_data” | Coursa Venue + IRL | Specifies dataset as retail data |

There are the following related settings in venue.json file.

#### “folder\_in”

This setting normally defines the path where FP\_builder provides automatic search for datasets to processing. With provided input list the auto search is disabled, and the settings is used another way. Path, defined by setting “folder\_in” of venue.json, is joined with each dataset\_path\_i. So, setting “folder\_in” defines absolute path of datasets grout and dataset\_path\_i defines local path for datasets to processing.

#### *"in\_file\_mask"*

This setting specifies a mask which indicates dataset files for processing. Dataset attributes specified in dataset input list can change “in\_file\_mask” setting for the related dataset. Predefined file masks are given in the table below.

|  |  |
| --- | --- |
| **Dataset attribute** | **in\_file\_mask** |
| “venue\_data” | “ivl\*.dat” |
| “survey\_data” | “irl\*.dat” |
| “maper\_data” | “tpn.dat” |
| “retail\_data” | “irl\*.dat” |

The mask defined by ”in\_file\_mask” in venue.json is applied to each dataset folder from dataset input list for other datasets.

Default "in\_file\_mask" is “irl\*.dat”

#### *"default\_mag\_validators" and "mag\_validators"*

"default\_mag\_validators" setting defines a default validator set for data validation. Dataset attributes specified in dataset input list can change “default\_mag\_validators” setting for the related dataset. Predefined validator sets are given in the table below.

|  |  |
| --- | --- |
| **Dataset attribute** | **in\_file\_mask** |
| “venue\_data” | “for\_ivl” |
| “survey\_data” | “for\_coursa\_survey\_tool” |
| “maper\_data” | “for\_mapper” |
| “retail\_data” | “for\_irl” |

The validator set defined by ”in\_file\_mask” in venue.json is applied to each dataset folder from dataset input list for other datasets.

"mag\_validators" settings defines additional validator list which is applied for every dataset whatever attribute specified.

# Typical use-cases of fingerprint building

## Easy survey datasets processing

Usage: FP\_builder -- settings venue.json

Key settings of venue.json:

{

…

“in\_file\_mask”: “irl\*.dat”,

"default\_mag\_validators": "for\_coursa\_survey\_tool",

"folder\_in": "//server/path\_to\_survey\_datasets",

…

}

Result: fingerprints and grids built with survey datasets from specified with “folder\_in” folder.

## Crowdsourcing datasets processing

Usage: FP\_builder -- settings venue.json

Key settings of venue.json:

{

…

“in\_file\_mask”: “ivl\*.dat”,

"default\_mag\_validators": "for\_ivl",

"folder\_in": "//server/in\_path\_to\_ivl\_datasets",

…

}

Result: fingerprints and grids built with crowdsourcing datasets from specified with “folder\_in” folder.

## Simultaneous processing of survey and crowdsourcing datasets

Usage: FP\_builder -- settings venue.json --input\_list dataset\_list.json

Key settings of venue.json:

{

…

“in\_file\_mask”: “irl\*.dat”,

"default\_mag\_validators": "for\_coursa\_survey\_tool",

"folder\_in": "",

…

}

dataset\_list.json example:

{

"datasets\_list":

[

[

["dataset\_path\_1"],

["dataset\_path\_2"],

["dataset\_path\_3", "venue\_data"],

…

]

]

}

Result: fingerprints and grids built with survey and crowdsourcing datasets provided in dataset\_list.json file.

## Iterative build

Usage: FP\_builder -- settings venue.json --input\_list dataset\_list.json

Key settings of venue.json:

{

…

“in\_file\_mask”: “irl\*.dat”,

"default\_mag\_validators": "for\_coursa\_survey\_tool",

"folder\_in": "",

“mag\_grid\_file” : "//server/in\_path\_to\_grids/magnetic.grid",

"wifi\_grid\_file" : "//server/in\_path\_to\_grids/magnetic.grid",

"ble\_grid\_file" : "//server/in\_path\_to\_grids/magnetic.grid",

…

}

dataset\_list.json example:

{

"datasets\_list":

[

[

["dataset\_path\_1"],

["dataset\_path\_2"],

["dataset\_path\_3", "venue\_data"]

]

]

}

Result: fingerprints and grids based on specified grid files joined with data of survey and crowdsourcing datasets provided in dataset\_list.json file.