

# SUSHI / IG Publisher Integration and Configuration

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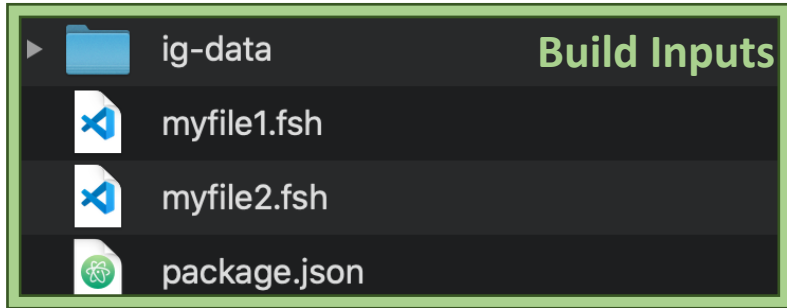


Mark Kramer



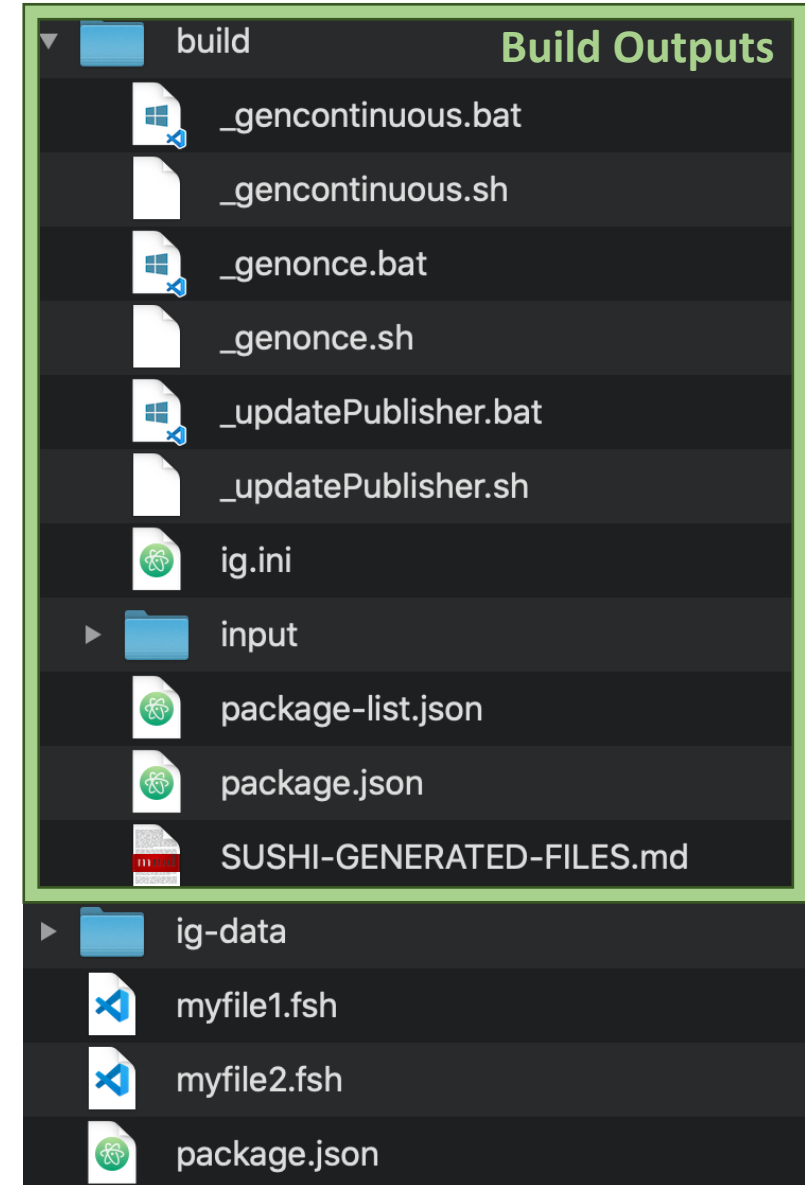
Chris Moesel

# Using SUSHI 0.12.x Standalone

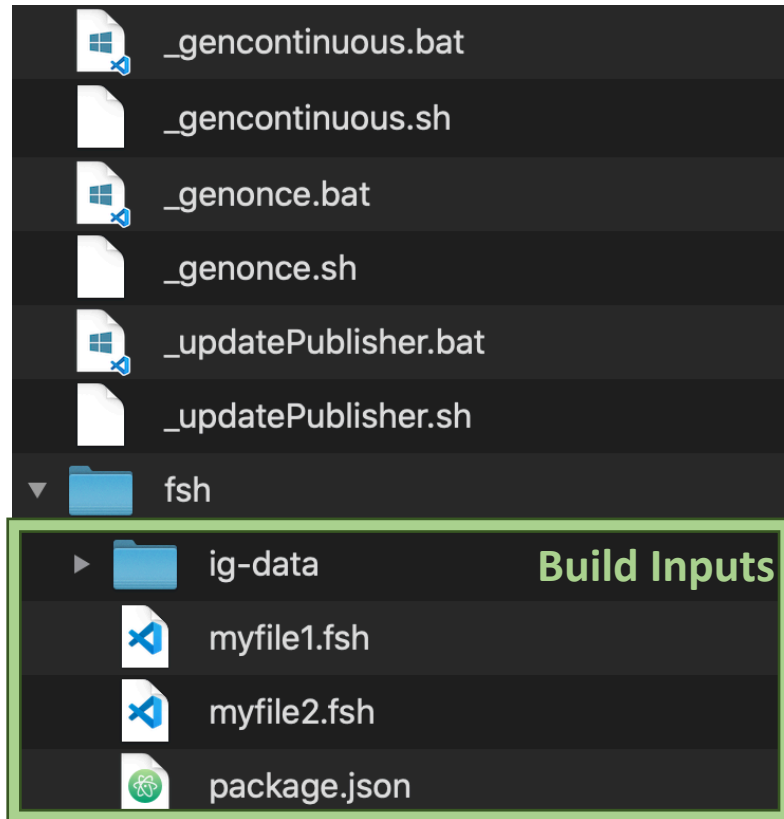


**sushi . -o build**

- Users can specify input and output paths
- If sushi is run with no arguments, defaults to:
  - Input path: `.` (*current folder*)
  - Output path: `build`
- To run IG Publisher, either:
  - Run it from inside output folder (e.g., build)
  - Copy output files to separate project folder

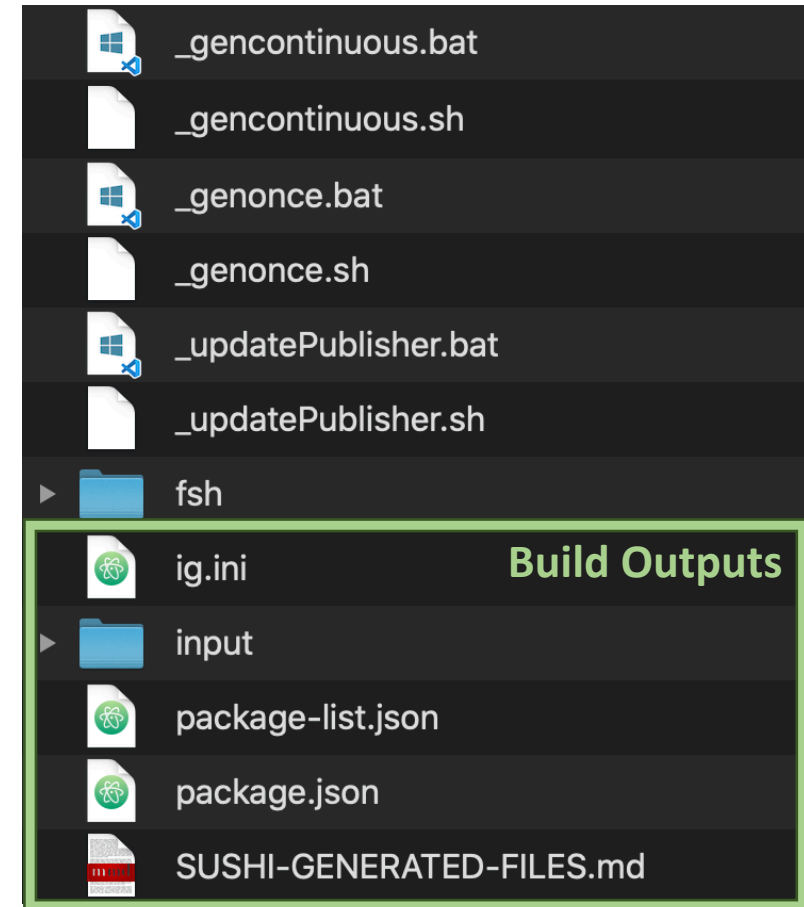


# Using SUSHI 0.12.x For IG Publisher Auto Build



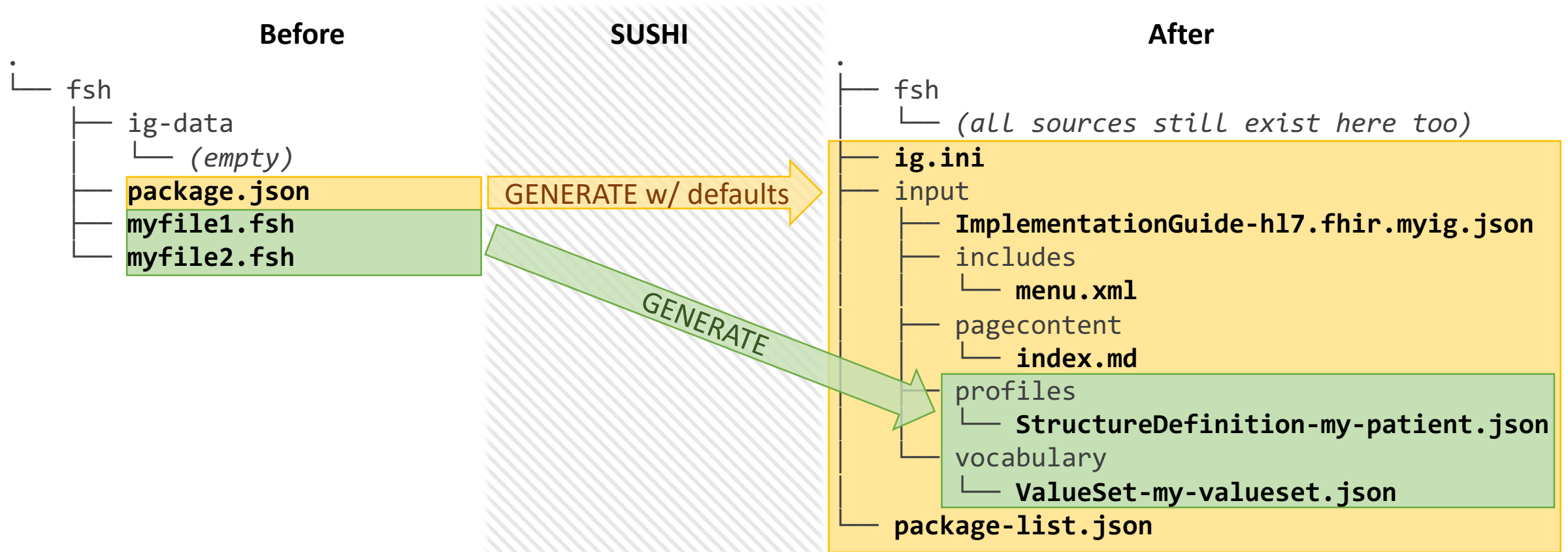
If the IG Publisher detects a *fsh* subfolder, it automatically runs SUSHI for you!

**sushi fsh -o .**



- A *fsh* subfolder triggers IG Publisher compliant defaults:
  - Input path: `fsh`
  - Output path: `.` (*current folder*)

# Current Architecture – Simplest Use Case



## The Good

SUSHI handles all IG source files  
Provides a QUICK start for users

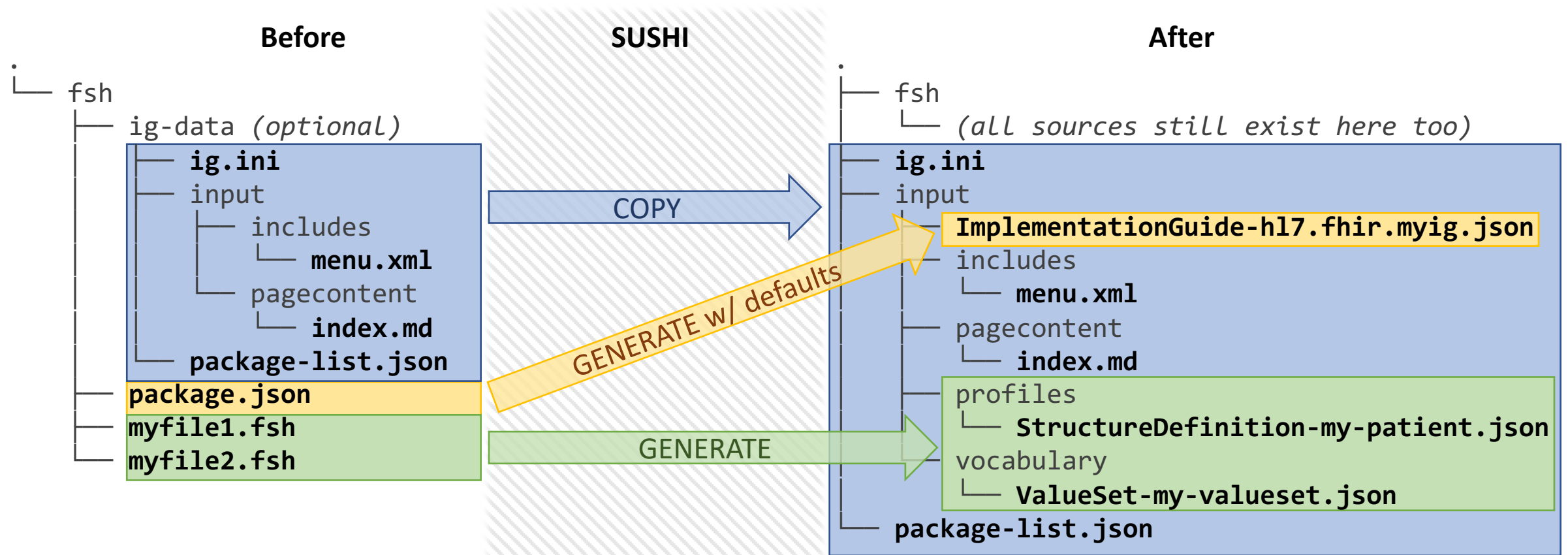
## The Bad

SUSHI handles all IG source files

## The Ugly

Very limited control over IG JSON file  
Some generated files are only placeholders

# Current Architecture – Recommended Use Case



## The Good

SUSHI builds entire IG JSON file  
Early adopters are used to it

## The Bad

SUSHI builds entire IG JSON file  
Duplicate files and folder names

## The Ugly

Very limited control over IG JSON file  
Overwrites any files already in target folder

# SUSHI Configuration Beta: ImplementationGuide

The config.yaml file can control all of the properties in ImplementationGuide

```
config.yaml ×
fsh > config.yaml > ...

8 # ImplementationGuide-hl7.fhir.us.mcode.json
9 # The properties below are used to create the ImplementationGuide resource. For a list of
10 # supported properties, see:
11 # http://build.fhir.org/ig/HL7/fhir-shorthand/branches/beta/sushi.html#ig-development
12 #
13 id: hl7.fhir.us.mcode
14 canonical: http://hl7.org/fhir/us/mcode
15 version: 1.0.1
16 name: mCODE
17 title: "HL7 FHIR Implementation Guide:
18 | minimal Common Oncology Data Elements (mCODE) Release 1 - US Realm | STU1"
19 status: active
20 publisher:
21 | name: HL7 International Clinical Interoperability Council
22 | url: http://www.hl7.org/Special/committees/cic
23 | email: ciclist@lists.HL7.org
24 description:
25 | mCODE™ (short for Minimal Common Oncology Data Elements) is an initiative
26 | intended to assemble a core set of structured data elements for oncology
27 | electronic health records.
28 license: CC0-1.0
29 fhirVersion: 4.0.1
30 dependencies:
31 | hl7.fhir.us.core: 3.1.0
32 parameters:
33 | show-inherited-invariants: false
34 copyrightYear: 2019+
35 releaseLabel: STU1

() ImplementationGuide-hl7.fhir.us.mcode.json ×
input > {} ImplementationGuide-hl7.fhir.us.mcode.json > ...
1 {
2   "resourceType": "ImplementationGuide",
3   "id": "hl7.fhir.us.mcode",
4   "url": "http://hl7.org/fhir/us/mcode/ImplementationGuide/hl7.fhir.us.mcode",
5   "version": "1.0.1",
6   "name": "mCODE",
7   "title": "HL7 FHIR Implementation Guide: minimal Common Oncology Data Elements (mCODE) Rel
8   "status": "active",
9   "publisher": "HL7 International Clinical Interoperability Council",
10  "contact": [{
11    "name": "HL7 International Clinical Interoperability Council",
12    "telecom": [
13      { "system": "url", "value": "http://www.hl7.org/Special/committees/cic" },
14      { "system": "email", "value": "ciclist@lists.HL7.org" }
15    ]
16  }],
17  "description": "mCODE™ (short for Minimal Common Oncology Data Elements) is an initiative
18  "packageId": "hl7.fhir.us.mcode",
19  "license": "CC0-1.0",
20  "fhirVersion": [ "4.0.1" ],
21  "dependsOn": [
22    {
23      "uri": "http://hl7.org/fhir/us/core/ImplementationGuide/hl7.fhir.us.core",
24      "packageId": "hl7.fhir.us.core",
25      "version": "3.1.0"
26    }
27  ],
28  "definition": {
29    "resource": [ ...
30  ],
31  "page": { ...
32  },
33  "parameter": [
34    { "code": "copyrightyear", "value": "2019+" },
35    { "code": "releaselabel", "value": "STU1" },
36    { "code": "show-inherited-invariants", "value": "false" },
37    { "code": "path-history", "value": "http://hl7.org/fhir/us/mcode/history.html" }
38  ]
39 }
```



# SUSHI Configuration Beta: IG Resource List

The Implementation Guide “resource” list is populated using FSH definitions

Examples.fsh ✕

fsh > Examples.fsh

```
1 Instance: mCODEPrimaryCancerConditionExample01
2 InstanceOf: PrimaryCancerCondition
3 Description: "mCODE Example for Primary Cancer Condition"
4 * id = "mCODEPrimaryCancerConditionExample01"
5 * meta.profile = "http://hl7.org/fhir/us/mcode/StructureDefinition/mcode-primary-cancer-condition"
6 * clinicalStatus = ClinStatus#active "Active"
7 * verificationStatus = VerStatus#confirmed "Confirmed"
8 * code = SCT#254637007 "Non-small cell lung cancer (malignant neoplasm)"
```

... and optionally modified  
or appended in config.yaml

{ } ImplementationGuide-hl7.fhir.us.mcode.json ✕

input > { } ImplementationGuide-hl7.fhir.us.mcode.json > { } definition > [ ] resource > { } 74 > { } reference

```
614 {
615   "reference": {
616     "reference": "Condition/mCODEPrimaryCancerConditionExample01"
617   },
618   "name": "mCODEPrimaryCancerConditionExample01",
619   "description": "mCODE Example for Primary Cancer Condition",
620   "exampleCanonical": "http://hl7.org/fhir/us/mcode/StructureDefinition/mcode-primary-cancer-condition"
621 },
```

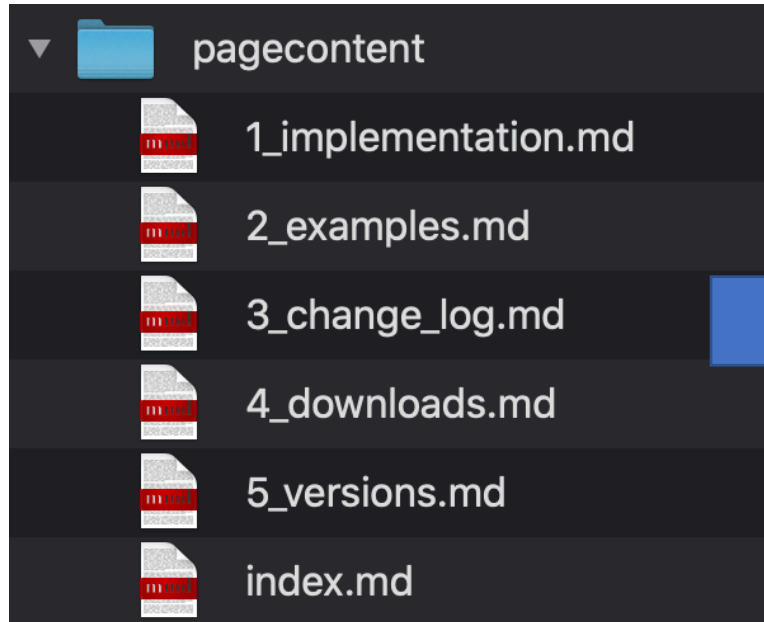


# SUSHI Configuration Beta: IG Page List

The ImplementationGuide “page” list can be populated using pagecontent files

```
YAML config.yaml X
fsh > YAML config.yaml > ...

37 pages:
38   index.md:
39     title: Home
40   implementation.md:
41     title: Implementation
42   examples.md:
43     title: Examples
44   change_log.md:
45     title: Change Log
46   downloads.md:
47     title: Downloads
48   versions.md:
49     title: Versions
```




... or discreetly defined in config.yaml

```
{ } ImplementationGuide-hl7.fhir.us.mcode.json X
input > { } ImplementationGuide-hl7.fhir.us.mcode.json > { } definition > { } page

703 "page": [
704   {
705     "nameUrl": "toc.html",
706     "title": "Table of Contents",
707     "generation": "html",
708     "page": [
709       {
710         "nameUrl": "index.html",
711         "title": "Home",
712         "generation": "markdown"
713       },
714       {
715         "nameUrl": "implementation.html",
716         "title": "Implementation",
717         "generation": "markdown"
718       },
719       {
720         "nameUrl": "examples.html",
721         "title": "Examples",
722         "generation": "markdown"
723       },
724       {
725         "nameUrl": "change_log.html",
726         "title": "Change Log",
727         "generation": "markdown"
728       },
729       {
730         "nameUrl": "downloads.html",
731         "title": "Downloads",
732         "generation": "markdown"
733       },
734       {
735         "nameUrl": "versions.html",
736         "title": "Versions",
737         "generation": "markdown"
738       }
739     ]
740   }
741 ]
```

# SUSHI Configuration Beta: ig.ini

The ig.ini file can *optionally* be generated using config.yaml



```
YAML config.yaml ×
fsh > YAML config.yaml > ...

51  # -----ig.ini-----
52  #   To use a provided ig-data/ig.ini file, delete the "template" property below.
53  #
54  template: hl7.fhir.template#0.1.0
```

```
ig.ini ×
ig.ini

1  [IG]
2  ; *****
3  ; *                               WARNING: DO NOT EDIT THIS FILE                               *
4  ; *
5  ; * This file is generated by SUSHI. Any edits you make to this file will be overwritten.          *
6  ; *
7  ; * This ig.ini was generated using the template property in config.yaml. To provide your own        *
8  ; * ig.ini, create an ig.ini file in the ig-data folder with required properties: ig, template.    *
9  ; * See: https://build.fhir.org/ig/FHIR/ig-guidance/using-templates.html#root                        *
10 ; *****
11 ig = input/ImplementationGuide-hl7.fhir.us.mcode.json
12 template = hl7.fhir.template#0.1.0
```

# SUSHI Configuration Beta: menu.xml

The menu.xml file can *optionally* be generated using config.yaml

```
config.yaml X
fsh > config.yaml > ...
56 # -----menu.xml-----
57 # To use a provided ig-data/input/includes/menu.xml file, delete the "menu" property below.
58 #
59 menu:
60   Home: index.html
61   Profiles: artifacts.html#2
62   Extensions: artifacts.html#3
63   Value Sets: artifacts.html#4
64   Downloads: downloads.html
65   Examples: examples.html
66   History: http://hl7.org/fhir/us/mcode/history.html
```

```
menu.xml X
input > includes > menu.xml
1 <!-- menu.xml {% comment %}
2 *****
3 * WARNING: DO NOT EDIT THIS FILE *
4 *
5 * This file is generated by SUSHI. Any edits you make to this file will be overwritten. *
6 *
7 * To change the contents of this file, edit the "menu" attribute in the tank config.yaml file *
8 * or provide your own menu.xml in the ig-data/input/includes folder *
9 *****
10 {% endcomment %} -->
11
12 <ul xmlns="http://www.w3.org/1999/xhtml" class="nav navbar-nav">
13   <li>
14     <a href="index.html">Home</a>
15   </li>
16   <li>
17     <a href="artifacts.html#2">Profiles</a>
18   </li>
19   <li>
20     <a href="artifacts.html#3">Extensions</a>
21   </li>
22   <li>
23     <a href="artifacts.html#4">Value Sets</a>
24   </li>
25   <li>
26     <a href="downloads.html">Downloads</a>
27   </li>
28   <li>
29     <a href="examples.html">Examples</a>
30   </li>
31   <li>
32     <a href="http://hl7.org/fhir/us/mcode/history.html">History</a>
33   </li>
34 </ul>
```



# SUSHI Configuration Beta: package-list.json

The package-list.json file can *optionally* be generated using config.yaml

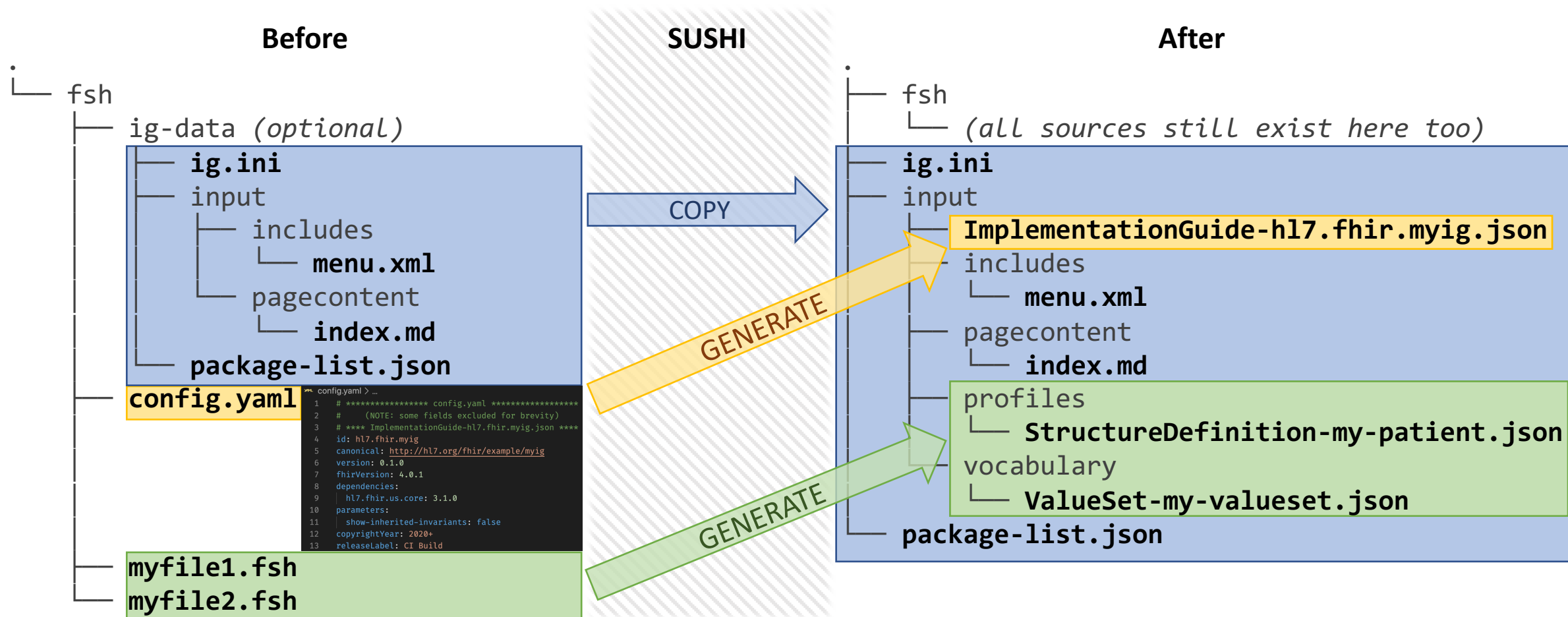
```
config.yaml X
fsh > config.yaml > ...

68 # -----package-list.json-----
69 #   To use a provided ig-data/package-list.json file, delete the "history" property below.
70 #
71 history:
72   title: "HL7 FHIR Implementation Guide: minimal Common Oncology Data Elements
73     (mCODE) Release 1 - US Realm | STU1 PreRel#2"
74   current: http://build.fhir.org/ig/HL7/fhir-mCODE-ig/
75   1.0.1:
76     fhirversion: 4.0.1
77     date: 2020-03-06
78     desc: STU 1 Release
79     path: http://hl7.org/fhir/us/mcode/STU1
80     status: trial-use
81     sequence: STU 1
82     current: true
83   0.9.1:
84     fhirversion: 4.0.0
85     date: 2019-06-10
86     desc: Initial STU ballot (Sep 2019 Ballot)
87     path: http://hl7.org/fhir/us/mcode/2019Sep/
88     status: ballot
89     sequence: STU 1
```

```
{ } package-list.json X
{ } package-list.json > ...
1 {
2   "package-id": "hl7.fhir.us.mcode",
3   "canonical": "http://hl7.org/fhir/us/mcode",
4   "title": "HL7 FHIR Implementation Guide: minimal Common Oncology Data Elements (mCODE) Release 1",
5   "introduction": "mCODE™ (short for Minimal Common Oncology Data Elements) is an initiative intend",
6   "list": [
7     {
8       "version": "current",
9       "desc": "Continuous Integration Build (latest in version control)",
10      "path": "http://build.fhir.org/ig/HL7/fhir-mCODE-ig/",
11      "status": "ci-build",
12      "current": true
13    },
14    {
15      "version": "1.0.1",
16      "date": "2020-03-06",
17      "desc": "STU 1 Release",
18      "path": "http://hl7.org/fhir/us/mcode/STU1",
19      "status": "trial-use",
20      "sequence": "STU 1",
21      "fhirversion": "4.0.1",
22      "current": true
23    },
24    {
25      "version": "0.9.1",
26      "date": "2019-06-10",
27      "desc": "Initial STU ballot (Sep 2019 Ballot)",
28      "path": "http://hl7.org/fhir/us/mcode/2019Sep/",
29      "status": "ballot",
30      "sequence": "STU 1",
31      "fhirversion": "4.0.0"
32    }
33  ]
34 }
```



# Beta Architecture – Multiple Config Files Use Case



## The Good

User has more control of IG JSON

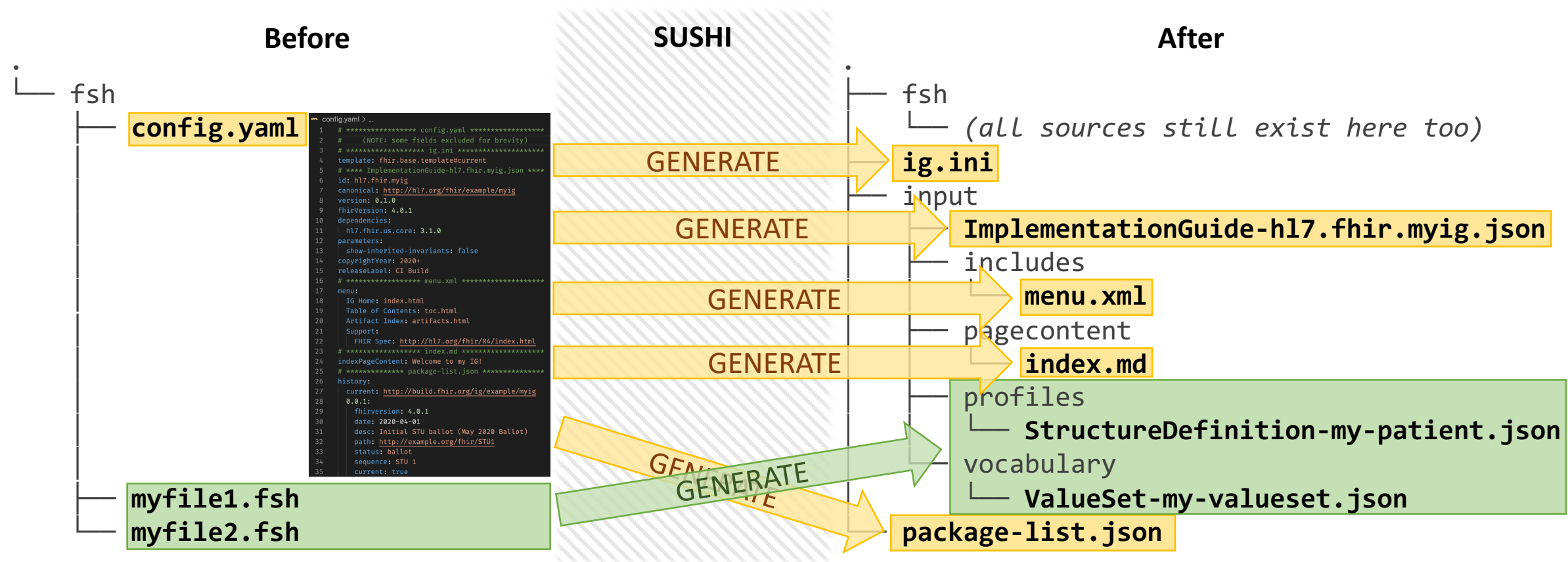
## The Bad

Duplicate files and folder names

## The Ugly

Copies overwrite files already in target folder

# Beta Architecture – Master Config File Use Case



## The Good

User has more control of IG JSON  
All config-related info in one place

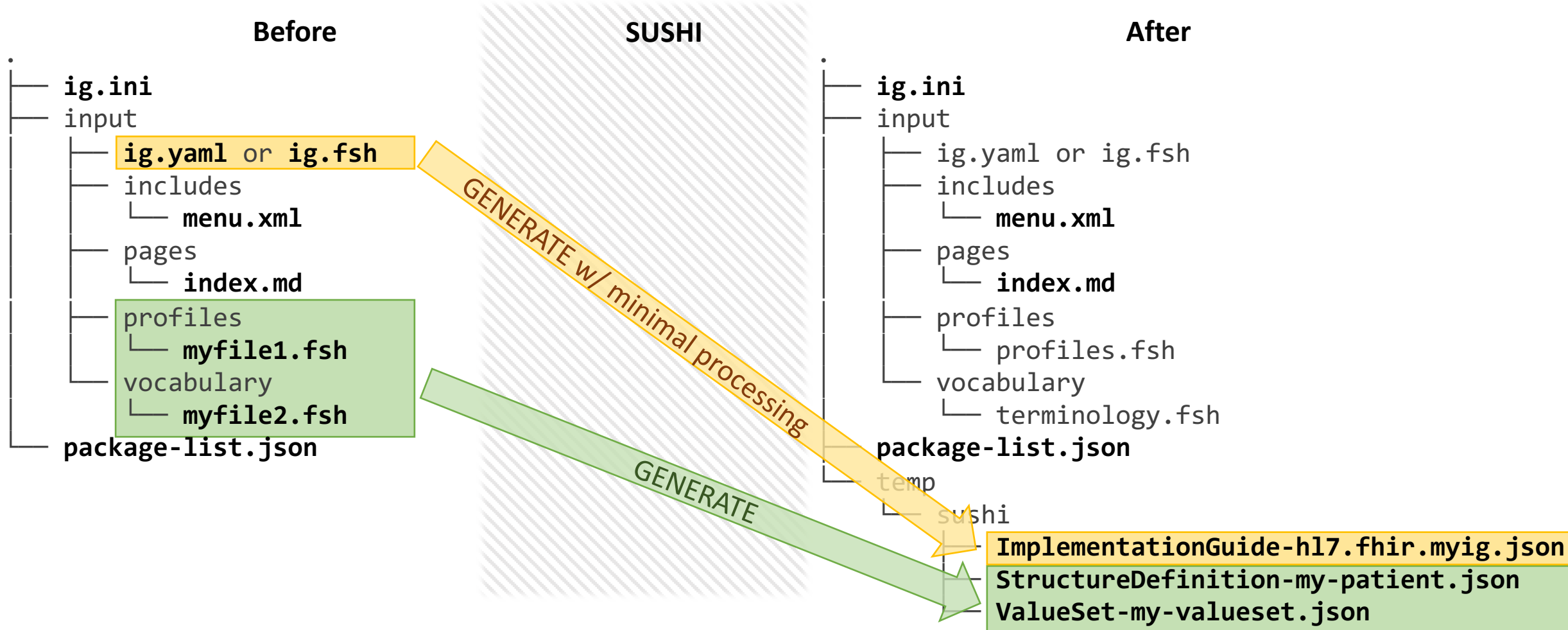
## The Bad

May have duplicate files & folders  
SUSHI tightly coupled w/ pub files

## The Ugly

Generated files overwrite files in target folder  
SUSHI may be “over-stepping” its boundaries

# Potential Future Architecture



## The Good

Same Structure as non-FSH projects  
User has full control of IG JSON

## More Good

Clean separation of source & out  
No more duplicate files/folders!

## The Tradeoffs

User responsible for multiple config files  
Requires new IG Publisher development



# Resources

## FHIR Shorthand

- **Documentation:** <http://hl7.org/fhir/uv/shorthand/2020May/index.html>

## SUSHI 0.12.x

- **Release Notes:** <https://github.com/FHIR/sushi/releases/tag/v0.12.6>
- **Documentation:** <http://hl7.org/fhir/uv/shorthand/2020May/sushi.html>
- **Install or Update:** `npm install -g fsh-sushi`

## SUSHI 0.13.x BETA

- **Release Notes:** <https://github.com/FHIR/sushi/releases/tag/v0.13.0-beta.1>
- **Documentation:** <http://build.fhir.org/ig/HL7/fhir-shorthand/branches/beta/sushi.html>
- **Install or Update:** `npm install -g fsh-sushi@beta`

Talk to us on [chat.fhir.org](https://chat.fhir.org/#shorthand): #shorthand

# Discussion

