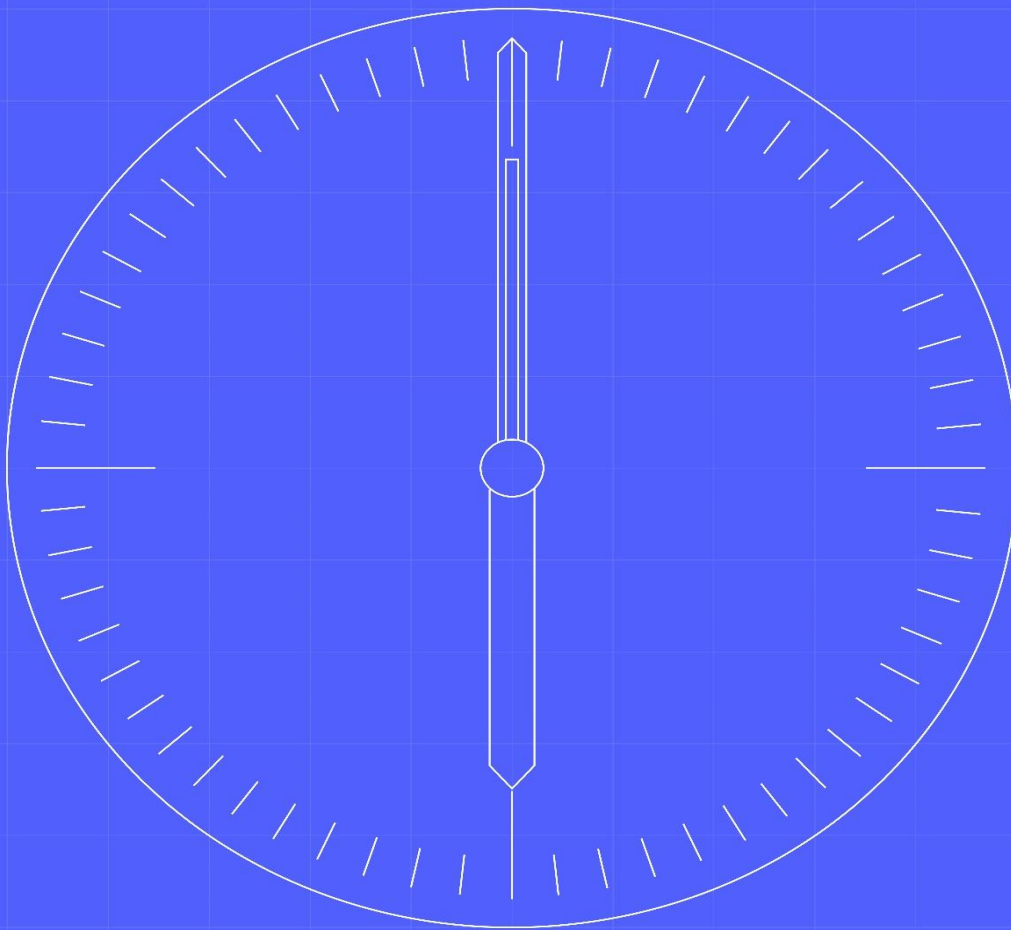


# MHHS Design Release Note

## Interim Release 2.3

### Release Date: 29-11-2023



Document owner

**Design Team**

Status:

**Final**

Document number

**DEL1275**

Date

**29/11/2023**

Version

**V1.0**

Classification

**Public**

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## 1.1 Change Record

Date	Author	Version	Change Detail
22/11/2023	MHHS Design Team	0.1	Initial Draft
29/11/2023	MHHS Design Team	1.0	Final version

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## 1.2 Reviewers

Reviewer	Role

---

## 2 INTRODUCTION

These are the release notes for Interim Release 2.3 of the MHHS Design.

Use Release Notes to keep up with what's going on. Release notes provide a summary of what's new and what issues have been resolved within the design.

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## 3 OVERVIEW

Interim Release 2.3 is a patch to Interim Release 2.

### Improvements:

Interim Release 2.3 constitutes updated versions of Swagger which have been uplifted to address found misalignments.

The Programme have conducted an impact assessment of the changes in IR2.3 and can advise that Programme Participants to carry re-testing against the DINs below. More testing impacts are below under each DIN section.

The below DINs delivered the changes in Swagger.

- MHHS-DIN-778
- MHHS-DIN-781
- MHHS-DIN-782
- MHHS-DIN-789
- MHHS-DIN-790
- MHHS-DIN-797

The intent of DIN-778 was originally implemented as part of Interim Release 3, this fix has been brought forward into Interim Release 2.3 as a new DIN (DIN-778).

DIN-781 was originally implemented as part of Interim Release 6 as DIN-748, this fix has been brought forward into Interim Release 2.3 as a new DIN (DIN-781). It will also be fixed in Interim Release 5.2 as DIN-783.

DIN-782 was originally implemented as part of Interim Release 6 as DIN-749, this fix has been brought forward into Interim Release 2.3 as a new DIN (DIN-782). It will also be fixed in Interim Release 5.2 as DIN-784.

DIN-789 was originally implemented as part of Interim Release 5 as DIN-673, this fix has been brought forward into Interim Release 2.3 as a new DIN (DIN-789).

DIN-790 will be applied to Interim Release 2.3. This change will also be applied to Interim Release 5.2 as DIN-791 and Interim Release 7 as DIN-792.

DIN-797 will be applied to Interim Release 2.3 (Capitalisation changes). This change will also be applied to Interim Release 5.2 as DIN-798 and Interim Release 7 as DIN-799.

Further guidance on the Release.

### Versioning:

Interim Releases are NOT a blanket updating of all the design artefacts and models to the next release number. Each Document artefact is separately version controlled and tracked. Interim releases are a collection of updated artefacts which are updated. The version number depends on the last revision of the artefact. Thus, an interim release will publish and consists of documents at different version numbers. Some documents contain multiple models, interfaces, or report definitions which each have a version number. The artefacts' own document version number may contain different objects at different version numbers depending on the changes made to the artefact.

Versions of design artefacts with tracked changes is available on the Red-Lined Design Artefacts page.

### JSON/YAML:

The best online tool we recommend verifying the extent of the changes is: <https://www.textcompare.org/yaml/>. This tool will clearly show the differences between the YAML versions 1.2.2 and 1.2.3.

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### 3.1 Release Feedback

Any queries or feedback on this release or the contents of this release note please contact us via [Design@MHHSprogramme.co.uk](mailto:Design@MHHSprogramme.co.uk)

## 4 Impacted Artefacts

The following table contains a list and versions of design artefacts/documents which have been updated.

Artefact	Version Number	Theme	Impact
E2E001 – End-to-End Solution Architecture	V3.2.1	Supporting Documents	Additional Solution Design Details
MHHSPROGRAMME-SubmitEvents-1.2.3-resolved.json	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-SubmitEvents-1.2.3-resolved.yaml	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-SubmitEvents-1.2.3-swagger.json	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-SubmitEvents-1.2.3-swagger.yaml	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-DataCatalogue-1.2.3-domain.json	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-DataCatalogue-1.2.3-domain.yaml	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-DataTypes-1.2.3-domain.json	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-DataTypes-1.2.3-domain.yaml	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-Interfaces-1.2.3-domain.json**	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-Interfaces-1.2.3-domain.yaml**	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-RealCommonBlocks-1.2.3-domain.json**	V1.2.3	Supporting Documents	Updated Swagger definitions
MHHSPROGRAMME-RealCommonBlocks-1.2.3-domain.yaml**	V1.2.3	Supporting Documents	Updated Swagger definitions

\*\* no content updates – updates to linked objects only

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## 5 Resolved Issues

All fixes Design Issue Notifications (DINs) and the Request for Change (RFCs) to MHHS Design since the last release that have been resolved in this release are included in the list below:

DIN/RFC Ref	Description	Status
MHHS-DIN-778	Fix enumeration on the PUB domain for the following PUBs: PUB-004, PUB-019, PUB-020, PUB-040 and PUB-050 in DT-983. Same IFs added for DT-000.	Fixed
MHHS-DIN-781	Schema Bug - DI-487-Total-Number-Energised-MPANs.maxLength should not have a maxLength validation attribute as it is an integer type. This means the schema itself does not validate against the rules for these types of schemas	Fixed
MHHS-DIN-782	SchemaBug - DipMessage.payload is not a required property; therefore, different property names will pass validation without being checked - this means if you spell it "Payload" with a capital P instead it will effectively skip validation resulting in a false positive.	Fixed
MHHS-DIN-789	Update regex patterns for the following data types: DT-016, DT-022, DT-023.	Fixed
MHHS-DIN-790	Update of DI-123 SSC to include a regex pattern to ensure a 4-digit numerical string is submitted.	Fixed
MHHS-DIN-797	E2E001 Architecture document will be updated to reflect the adherence to case sensitivity on the inbound messages, and the removal of the statement in Swagger relating to case insensitivity.	Fixed

Refer below for further information on the DINs above.

# MHHS-DIN-778

## Description of Change

PUB-004, PUB-019, PUB-020, PUB-040 and PUB-050 were missing from DT-983 that defines the enumeration of available values, so these have been added.

Before update	After update
<pre>387 DT-983-PublicationID: 388   description: Publication ID 389   type: string 390   minLength : 6 391   maxLength : 8 392   example : 'PUB-007' 393   enum: 394     - PUB-001 # NotPUBication of Change of Supplier 395     - PUB-002 # NotPUBication to New Supplier of Site Information 396     - PUB-005 # Metering Service MTD Updates to Registration 397     - PUB-006 # Registration Service NotPUBication of MTD Updates 398     - PUB-007 # Change of Energisation Status Outcome 399     - PUB-008 400     - PUB-009 401     - PUB-013 402     - PUB-014 403     - PUB-015 404     - PUB-016 405     - PUB-018 406     - PUB-021 407     - PUB-022 408     - PUB-023 409     - PUB-024 410     - PUB-025 411     - PUB-026 412     - PUB-027 413     - PUB-028 414     - PUB-031 415     - PUB-032 416     - PUB-033 417     - PUB-034 418     - PUB-035 419     - PUB-036 420     - PUB-037 421     - PUB-038 422     - PUB-039 423     - PUB-041 424     - PUB-043 425     - PUB-044 426     - PUB-045 427     - PUB-047 428     - REP-002 429     - REP-002A 430     - REP-003 431     - REP-004 432     - REP-006 433     - REP-007 434     - REP-008 435     - REP-009 436</pre>	<pre>400 DT-983-PublicationID: 401   description: Publication ID 402   type: string 403   minLength : 6 404   maxLength : 8 405   example : 'PUB-007' 406   enum: 407     - PUB-001 # Notification of Change of Supplier 408     - PUB-002 # Notification to New Supplier of Site Information 409     - PUB-004 # DIN-778 410     - PUB-005 # Metering Service MTD Updates to Registration 411     - PUB-006 # Registration Service Notification of MTD Updates 412     - PUB-007 # Change of Energisation Status Outcome 413     - PUB-008 414     - PUB-009 415     - PUB-013 416     - PUB-014 417     - PUB-015 418     - PUB-016 419     - PUB-018 420     - PUB-019 ## DIN-778 421     - PUB-020 ## DIN-778 422     - PUB-021 423     - PUB-022 424     - PUB-023 425     - PUB-024 426     - PUB-025 427     - PUB-026 428     - PUB-027 429     - PUB-028 430     - PUB-031 431     - PUB-032 432     - PUB-033 433     - PUB-034 434     - PUB-035 435     - PUB-036 436     - PUB-037 437     - PUB-038 438     - PUB-039 439     - PUB-040 ## DIN-778 440     - PUB-041 441     - PUB-043 442     - PUB-044 443     - PUB-045 444     - PUB-047 445     - PUB-050 ## DIN-778 446     - REP-002 447     - REP-002A 448     - REP-003 449     - REP-004 450     - REP-006 451     - REP-007 452     - REP-008 453     - REP-009 454</pre>



IF-004, IF-019, IF-020, IF-040 and IF-050 were missing from DT-000.

Before update	After update
<pre>39 DT-000-InterfaceID: 40   description: Interface ID 41   type: string 42   minLength : 6 43   maxLength : 8 44   example: IF-007 45   enum: 46   # list of allowable INFs 47     - IF-001 # Notification of Change of Supplier 48     - IF-002 # Notification to New Supplier of Site Information 49     - IF-005 # Metering Service MTD Updates to Registration 50     - IF-006 # Registration Service Notification of MTD Updates 51     - IF-007 # Change of Energisation Status Outcome 52     - IF-008 53     - IF-009 54     - IF-013 55     - IF-014 56     - IF-015 57     - IF-016 58     - IF-018 59     - IF-021 60     - IF-022 61     - IF-023 62     - IF-024 63     - IF-025 64     - IF-026 65     - IF-027 66     - IF-028 67     - IF-031 68     - IF-032 69     - IF-033 70     - IF-034 71     - IF-035 72     - IF-036 73     - IF-037 74     - IF-038 75     - IF-039 76     - IF-041 77     - IF-043 78     - IF-044 79     - IF-045 80     - IF-047 81     - REP-002 82     - REP-002A 83     - REP-003 84     - REP-004 85     - REP-006 86     - REP-007 87     - REP-008 88     - REP-009 89</pre>	<pre>40 DT-000-InterfaceID: 41   description: Interface ID 42   type: string 43   minLength : 6 44   maxLength : 8 45   example: IF-007 46   enum: 47   # list of allowable INFs 48   # list of allowable INFs 49     - IF-001 # Notification of Change of Supplier 50     - IF-002 # Notification to New Supplier of Site Information 51     - IF-004 # DIN-778 52     - IF-005 # Metering Service MTD Updates to Registration 53     - IF-006 # Registration Service Notification of MTD Updates 54     - IF-007 # Change of Energisation Status Outcome 55     - IF-008 56     - IF-009 57     - IF-013 58     - IF-014 59     - IF-015 60     - IF-016 61     - IF-018 62     - IF-019 # DIN-778 63     - IF-020 # DIN-778 64     - IF-021 65     - IF-022 66     - IF-023 67     - IF-024 68     - IF-025 69     - IF-026 70     - IF-027 71     - IF-028 72     - IF-031 73     - IF-032 74     - IF-033 75     - IF-034 76     - IF-035 77     - IF-036 78     - IF-037 79     - IF-038 80     - IF-039 81     - IF-040 # DIN-778 82     - IF-041 83     - IF-043 84     - IF-044 85     - IF-045 86     - IF-047 87     - IF-050 # DIN-778 88     - REP-002 89     - REP-002A 90     - REP-003 91     - REP-004 92     - REP-006 93     - REP-007 94     - REP-008 95     - REP-009 96</pre>

### Testing Impact

The DIP SIM is **not aligned** to the change detailed above; this means a change is required to the DIP SIM.

The Programme recommends that if the messages specified above apply to a Participant to carry out sample testing of these messages with the DIP SIM.

This would assure they can PIT test cleanly with the DIP SIM and successfully progress to CIT in their allotted interval.

## MHHS-DIN-781

### Description of Change

DI-487 updated in Swagger to align with the ECS Reports Catalogue. In the ECS Reports Catalogue, this is an INT10, so this would have a minimum value of 0 and a maximum of 9999999999. In addition, we are using minimum and maximum in Swagger to correctly define an integers' minimum and maximum values (rather than maxLength).

Before update:

```
1561 | DI-487-Total-Number-Energised-MPANS:  
1562 | description : The Total number of Energised MPANS by Settlement Period.  
1563 | type : integer #DIN-410  
1564 | maxLength : 10  
1565 |
```

After update:

```
1563 | DI-487-Total-Number-Energised-MPANS:  
1564 | description : The Total number of Energised MPANS by Settlement Period.  
1565 | type : integer #DIN-410, #DIN-748, #DIN-781  
1566 | minimum: 0  
1567 | maximum: 9999999999
```

### Testing Impact

The DIP SIM is **not aligned** to the change detailed above; this means a change is required to the DIP SIM.

The Programme recommends that for Participants who have successfully conducted PIT testing with the DIP SIM would therefore not need to carry out any re-testing.

## MHHS-DIN-782

### Description of Change

Currently, the Payload for the DIPMessage object is not mandatory in the Swagger. This has now been marked as required (using the required keyword) in Swagger so that it aligns with changes made in IR6.

Before update:

```
534 - DIPMessage:
535     description: DIP message - multiple payloads mapped into single object
536     type: object
537     properties:
538     payload:
539     oneOf:
540     - $ref: 'https://api.swaggerhub.com/domains/MHHSPROGRAMME/Interfaces/1.2.1#/components/schemas/IF-001-Payload'
```

After update:

```
534 # DIN-782
535
536 DIPMessage:
537     description: DIP message - multiple payloads mapped into single object
538     type: object
539     required:
540     - payload
541     properties:
542     payload:
543     oneOf:
544     - $ref: 'https://api.swaggerhub.com/domains/MHHSPROGRAMME/Interfaces/1.2.1#/components/schemas/IF-001-Payload'
545     - $ref: 'https://api.swaggerhub.com/domains/MHHSPROGRAMME/Interfaces/1.2.1#/components/schemas/IF-002-Payload'
```

### Testing Impact

The DIP SIM is **not aligned** to the change detailed above; this means a change is required to the DIP SIM.

Any Participants who were previously loading 'dummy' test data, these tests will now fail. All test messages will now need to submit to the DIP SIM with a valid payload.

This would assure they can PIT test cleanly with the DIP SIM and successfully progress to CIT in their allotted interval.

# MHHS-DIN-789

## Description of Change

Updated REGEX patterns for decimal “numbers” DT-016, DT-022 & DT-023. This is to align them with Interim Release 5 versions. The screenshot below shows both new and previous patterns, the previous patterns are commented out.

Before update:	After update:
<pre>DT-016-Decimal-9-3: description: kWh Consumption (9,3) format type: string pattern: ^-?[0-9]\d{8}(\.\d{3})?\$\$ example: '123456789.123'  DT-016N-Decimal-9-3: description: kWh Consumption (9,3) format type: string nullable: true pattern: ^-?[0-9]\d{8}(\.\d{3})?\$\$ example: '123456789.123'  DT-022-Decimal-9-6: description: Number (9,6) format type: string pattern: ^-?[0-9]\d{8}(\.\d{6})?\$\$ example: -987654321.123456  DT-022N-Decimal-9-6: description: Number (9,6) format type: string nullable: true pattern: ^-?[0-9]\d{8}(\.\d{6})?\$\$ example: -987654321.123456  DT-023-Positive-Decimal-9-6: description: Number (9,6) format type: string pattern : ^[0-9]\d{8}(\.\d{6})?\$\$ example: 123456789.123456  DT-023N-Positive-Decimal-9-6: description: Number (9,6) format type: string nullable: true pattern : ^[0-9]\d{8}(\.\d{6})?\$\$ example: 123456789.090000</pre>	<pre>262 DT-016-Decimal-9-3: + 263 description: kWh Consumption (9,3) format + 264 type: string + 265 # DIN-789 pattern: ^-?[0-9]\d{8}(\.\d{3})?\$\$ + 266 pattern: ^-?\d{1,9}\.\d{3}\$\$ + 267 example: '123456789.123' + 268 + 269 DT-016N-Decimal-9-3: + 270 description: kWh Consumption (9,3) format + 271 type: string + 272 nullable: true + 273 # DIN-789 pattern: ^-?[0-9]\d{8}(\.\d{3})?\$\$ + 274 pattern: ^-?\d{1,9}\.\d{3}\$\$ + 275 example: '123456789.123' + 276 + 277 + 278 DT-022-Decimal-9-6: + 279 description: Number (9,6) format + 280 type: string + 281 # DIN-789 pattern: ^-?[0-9]\d{8}(\.\d{6})?\$\$ + 282 pattern: ^-?\d{1,9}\.\d{6}\$\$ + 283 example: -987654321.123456 + 284 + 285 DT-022N-Decimal-9-6: + 286 description: Number (9,6) format + 287 type: string + 288 nullable: true + 289 # DIN-789 pattern: ^-?[0-9]\d{8}(\.\d{6})?\$\$ + 290 pattern: ^-?\d{1,9}\.\d{6}\$\$ + 291 example: -987654321.123456 + 292 + 293 DT-023-Positive-Decimal-9-6: + 294 description: Number (9,6) format + 295 type: string + 296 # DIN-789 pattern : ^[0-9]\d{8}(\.\d{6})?\$\$ + 297 pattern : ^\d{1,9}\.\d{6}\$\$ + 298 example: 123456789.123456 + 299 + 300 DT-023N-Positive-Decimal-9-6: + 301 description: Number (9,6) format + 302 type: string + 303 nullable: true + 304 # DIN-789 pattern : ^[0-9]\d{8}(\.\d{6})?\$\$ + 305 pattern : ^\d{1,9}\.\d{6}\$\$ + 306 example: 123456789.090000 + 307</pre>

## Testing Impact

The DIP SIM is **not aligned** to the change detailed above; this means a change is required to the DIP SIM.

Any Participants who were previously loading ‘dummy’ test data that did not align with the DES-138 Interface Catalogue, these tests will now fail. All test messages will now need to submit to the DIP SIM with a valid regular expression pattern.

This would assure they can PIT test cleanly with the DIP SIM and successfully progress to CIT in their allotted interval.

## MHHS-DIN-790

### Description of Change

Update of DI-123 SSC to include a regex pattern to ensure a 4-digit numerical string is submitted. The screenshot below shows the regex pattern that has been added:

Before update:

```
802 DI-123-SSC:
803   description : A legacy classification, retained solely for a subset of Traditional Meters, to assist with the
      allocation of gross consumption to individual Settlement Periods.
804   type : string
805   minLength : 4
806   maxLength : 4
807   example : 0123
```

After update:

```
804 DI-123-SSC:
805   description : A legacy classification, retained solely for a subset of Traditional
      Meters, to assist with the allocation of gross consumption to individual
      Settlement Periods.
806   type : string
807   minLength : 4
808   maxLength : 4
809   #DIN-790
810   pattern: ^\d{4,4}$
811   example : 0123
```

Line #810 has been added to the definition.

### Testing Impact

The DIP SIM is **not aligned** to the change detailed above; this means a change is required to the DIP SIM.

Any Participants who were previously loading 'dummy' test data that did not align with the DES-138 Interface Catalogue, these tests will now fail. All test messages will now need to submit to the DIP SIM with a valid regular expression pattern.

This would assure they can PIT test cleanly with the DIP SIM and successfully progress to CIT in their allotted interval.

## MHHS-DIN-797

### Description of Change

Updated the E2E001 design document to enforce capitalisation checks on the JSON message submitted. The following screenshot shows the changes that have been made to section 4.4.3 of the E2E001 Architecture document.

The DIP will **not** be enforcing **any** capitalisation checks on message ingress for path names and message structure. **However** **D**data items within messages are **also** case sensitive and the DIP will not convert between cases: data will pass through unaltered. **This follows OpenAPI standards.** Enumeration checks undertaken by the DIP are case sensitive, **e.g. e.g.** for the **CommonBlock/S1/environment** the term 'PROD' is accepted, whilst 'prod' or 'Prod' are rejected. A significant amount of legacy data items where case is important pass through the DIP and hence the reason why these checks are applied).

Generate return code based on the results of the above checks for the all the messages received in the single transaction.

The following screenshot shows the changes that have been made in Swagger.

```
4 # MMHS - Data Integration Platform
5 # SubmitEvents API
6 #
7 # ---- update notices -----
8 #
9 # ---- note on use of upper/lower case -----
10 ## DIN-797 29/11/2023
11 ## -----
12 # DIP will enforce capitalisation checks on JSON field names on message ingress.
13 # aligning with Open API 3.0 standards
14 #
15 #
16 # January 2023
17 # -----
18 # After consultation with the DIP SP there has been a significant change to the endpoint definitions for the
  submission of messages
19 # Instead of a single endpoint where all messages are submitted, each message interface will be submitted
  at a different endpoint
20 # The rationale for this change is primarily from a maintainability point-of-view as it allows maintainence
  on each interface in isolation from
21 # other interfaces and allows new message channels to be added without impact existing interfaces.
22 #
23 # outstanding work :-
24 # 1. inclusion of correct security schemas - complete in v1.1
25 # 2. replace swaggerhub domain with DIP domain name - to do
26 # 3. Agree delivery mechanism for the REPs- to do
27 # 4. Tidy up of response codes - complete in v1.1
28 # 5. Mandatory/null fields not complete and alignment with DES138 -complete in v1.1
29 # 6. Definition of Event Replay API - to do
30 #
31 # none of these items affect the data format
32 #
33 # any comments please relay to design@mhhhsprogramme.co.uk
34 # -----
35 # Change history
36 # -----
37 ## 1.2.3 21/11/23 Updated to include DINs 778, 781, 782, 789, 790, 797
```

## Testing Impact

The DIP SIM is **not aligned** to the change detailed above; this means a change is required to the DIP SIM.

All messages and event code variants are impacted and would fail if not corrected. The Programme advises Participants who have not entered CIT to carry out re-testing of all messages and event code variants that are in their scope against the DIP SIM.

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## 6 Unaffected Artefacts

All the other Interim Release 2 files are unaffected by Interim Release 2.3 including these Swagger files listed below.

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## 7 Issues/Limitations

This section describes any known limitations and obstacles to the release and fixes implemented.

Certain artefacts cannot be change marked. Reference will be made to documents which identify where these changes exist within the artefacts. Artefact documents in PDF form will be issued with tracked changes on to highlight where the changes are in the document.

Certain artefacts do not include a version/change history record, change history section have been added in some cases and changes are tagged using comments to provide a reference of DIN changes made to the artefact. Within Excel while all changes are marked, not every cell is tagged with the DIN reference as it was not possible to tag groups of cells with a DIN ref.

Transition Design documents are not currently under design release, change and configuration control at this time.

---

## 8 Past Releases

Details of previous release please refer to the relevant release note for details:

Version Number*	Release Date	Release type
5.0	21/02/2023	Baseline
5.1	14/06/2023	Interim Release 1
5.2	05/07/2023	Interim Release 2
5.3	02/08/2023	Interim Release 3
5.4	30/08/2023	Interim Release 4
5.5	04/10/2023	Interim Release 5
5.2.1	11/10/2023	Interim Release 2.1
5.5.1	17/10/2023	Interim Release 5.1
5.6	01/11/2023	Interim Release 6
5.2.2	11/11/2023	Interim Release 2.2

\* Various version numbering occurs on different documents for each release for details see previous release notes.