**Change Request Form**

## Change Request details

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| Change Request details |
| Change Request Title | *DIP Interface Specification (a.k.a Swagger) OpenAPI Upgrade 3.0 ->3.1* |
| Change Request Number | *CR049* |
| Originating Advisory / Working Group | *Avanade (DIP Service Provider)* |
| Risk/issue reference |  |
| Change Raiser | *Piotr Penar, Avanade* | Date raised: | *14/03/2024* |

***For further guidance on how to complete this document please see the supporting Change Request Form Guidance for Programme Participants. The guidance will support raising a change and responding to a change request via Impact Assessment. The Change Raiser should consider sharing the draft Change Request Form with impacted programme parties, prior to submission to PMO. The guidance, as well as other key documents are referenced below and can be found via the MHHS website.***

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| Change Request to be read in conjunction with: |
| MHHS Change Request Form Guidance for Programme Participants |
| MHHS Change Control Approach |
| MHHS Governance Framework |
| Ofgem’s MHHS Transition Timetable |

### Part A – Description of proposed change

**Guidance *– This section should be completed by the Change Raiser when raising the Change Request.***

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| Part A – Description of proposed change |
| **Issue statement:**The MHHS Programme OpenAPI Definitions (“the Swagger”) is currently on Version 3.0.of the Open API Specification. This version comes with limitations which has resulted in defects that have required manual workarounds during the System Integration Testing phase on the MHHS Programme. The DIP Service Provider recommends that the programme upgrade to version 3.1 in order to minimise Production issues as a result of the deficiencies of the older version. This CR is essential to reduce Production defects and delays to Migration as a result.Update the MHHS Programme OpenAPI definitions (“the Swagger”) to the recommended version of the Open API specification namely version 3.1. Currently the definitions are aligned to the 3.0 version of the OpenAPI specification. |
| **Description of change:**     The proposal is to uplift the OpenAPI definitions the programme produces that defines the DIP interfaces to version 3.1 of the OpenAPI specification from version 3.0. Programme Participants who consume the definitions will need to be able to support the updated specification standard. It is important to note that the upgrade *does not alter the structure of message definitions*. The most significant update in the 3.1 standard that impacts the Programme API definition is the removal of the nullable attribute which is being replaced by the use of the `type` keyword. Users now have the ability to define multiple types for a schema with an array including nullable items.Please see link below for further detail:<https://www.openapis.org/blog/2021/02/16/migrating-from-openapi-3-0-to-3-1-0>Programme participants will need to ensure that any toolsets they use to ingest the OpenAPI definitions into their development environment(s) support the Open API 3.1 standard and the updated specifications do not generate irrevocable differences to their message models between versions 3.0 and 3.1. |
| **Justification for change:**     The upgrade will align the Programme API definitions to version 3.1 of the OpenAPI specification. The significant change in version 3.1 aligns the Open API specification to the JSON Schema 2020-12. The mismatch between OpenAPI JSON Schema-like structures and JSON Schema itself has been an ongoing issue for developers. Full alignment of the two standards will, going forward, save developer’s and designer’s time spent translating between the two old standards.This will also reduce Production issues that may arise as a result of the mismatches highlighted above. |
| **Consequences of no change:**Old standards will endure and the workarounds to align OpenAPI specifications to JSON schema will continue for developers and designers.      |
| **Alternative options:**Delay the upgrade, to be implemented in a post go-live release. However, it is the strong recommendation of the DIP Service Provider that this change be implemented in-advance of completion of the formal test phases of the Programme.  |
| **Risks associated with potential change:**Parties not adopting the new Open API standard will not be aligned to the new programme interface definitions, and may encounter issues depending on how they choose to consume the swagger definitions. The program proposes to mitigate the risks around the upgrade by producing both a 3.1 and a 3.0 specification as part of the IR8.1 Release (TBC). This will provide Users direct visibility of the differences between the two standards. |
| **Stakeholders consulted on the potential change:**It should be restated that this change *does not alter the message definitions* and the change is primarily undertaken to ensure alignment with latest industry recommended standards; and to ease the development process, hence this change should be assessed by the technical development teams within Programme Participants delivery team. |
| **Target date by which a decision is required:** |      TBC |

### Part B – Initial Impact of proposed change

**Guidance *– This section should be completed by the Change Raiser before being submitted to the MHHS PMO.***

***Please document the benefits of the change and to delivery of the programme objectives***

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| What benefits does the change bring |
| The OpenAPI Specification is a broadly adopted industry standard for describing modern APIs. It defines a standard, programming language-agnostic interface description for HTTP APIs which allows both humans and computers to discover and understand the capabilities of a service without requiring access to source code, additional documentation. Moving to version 3.1 finally aligns the OpenAPI Schema with JSON Schema 2020-12 which mitigates against the inconvenience of translating between the two. |

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| Programme Objective | Benefit to delivery of the programme objective |
| To deliver the Design Working Group’s Target Operating Model (TOM) covering the ‘Meter to Bank’ process for all Supplier Volume Allocation Settlement meters | Simplification of schema definition interpretation |
| To deliver services to support the revised Settlement Timetable in line with the Design Working Group’s recommendation | Reduces the opportunity of misinterpretation of message definitions |
| To implement all related Code changes identified under Ofgem’s Significant Code Review (SCR) |      n/a |
| To implement MHHS in accordance with the MHHS Implementation Timetable |      n/a |
| To deliver programme capabilities and outcomes to enable the realisation of benefits in compliance with Ofgem’s Full Business Case |      n/a |
| To prove and provide a model for future such industry-led change programmes | Essential change as it provides the ongoing framework under which changes to message specifications are described. |

**Guidance *– Please document the known programme parties and programme deliverables that may be impacted by the proposed change***

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| Impacted areas | Impacted items |
| Impacted Parties | All – Technical Design teams |
| Impacted Deliverables | MHHS OpenAPI Definitions aka ‘The Swagger’ |
| Impacted Milestones | *None* |

**Note *– Please refer to MHHS DEL174 Change Request Guidance for Programme Participants for information on how to score the initial assessment.***

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| Initial assessment |
| Necessity of change |  | Expected lead time |  |
| Rationale of change |  | Expected implementation window |  |
| Expected change impact |  |  |  |

**Guidance *– Please include a reference and link to any additional documentation which the change relates to.***

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| Change Request to be read in conjunction with: |
| **Title** | **Reference** |
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### Part C.1 – Summary of Impact Assessment

### Note – *This section will be completed initially by the Change Raiser and then by Programme Participants as part of the full Impact Assessment.*

### *All Impact Assessment responses will be considered public and non-confidential unless otherwise marked. If there are any specific elements of the response (e.g. costs) that are confidential, please mark the specific sections as confidential rather than the response as a whole. The MHHS Programme will publish all Impact Assessment responses and redact any confidential information as noted.*

**Guidance – Programme Participants are required to:**

**Respond with ‘Agree’, ‘Disagree’ or ‘Abstain’, deleting as appropriate. If the respondent agrees, they can provide additional evidence to further support the assessment. If the respondent disagrees or abstains, they should provide a detailed rationale as to why.**

**Add any additional effects that have not already been identified. In doing so, they should provide as much detail as possible to allow a robust assessment to be made.**

**Proceed to Part C.2 for Impact Assessment Recommendation response once completed.**

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| Part C.1 – Summary of Impact Assessment (complete as appropriate) |
| **Effect on benefits***Aligns the OpenAPI Schema with JSON Schema 2020-12 which provides an easier path for developers/designers when incorporating the Open API specifactions within their developed solutions.*  |
| *<Delete as appropriate>:* **Agree Disagree Abstain** |
| *Impact Assessment respondents to add supporting commentary to support their selection. Where possible, Impact Assessment respondents to identify and describe any further impacts.**Impact Assessment respondents should consider and provide detail of any additional effect e.g. whether there will be an impact on when a benefit will be realised; who will realise the benefit; the extent to which the benefit will be realised.* *Where possible, contextual information should be included e.g. the benefit will be delayed by X weeks; the change means Y population will also realise the benefit.* |
| **Effect on consumers***n/a* |
| *<Delete as appropriate>:* **Agree Disagree Abstain** |
| *Impact Assessment respondents to add supporting commentary to support their selection. Where possible, Impact Assessment respondents to identify and describe any further impacts.**Impact Assessment respondents should consider and provide detail of any additional effect e.g. whether there will be an impact on service delivery to consumers; will there be a cost impact to consumers; will there be a choice impact to consumers?* *Where possible, contextual information should be included e.g. what is the scale of the effect? Will the effect be permanent?* |
| **Effect on schedule***The change has no impact on the schedule for the Central Programme and Avanade (DIP Service Provider). Respondents need to advise if the prospective change will have an impact on their delivery schedules, and if there is a significant impact then how would that materialise.* |
| *<Delete as appropriate>:* **Agree Disagree Abstain** |
| *Impact Assessment respondents to add supporting commentary to support their selection. Where possible, Impact Assessment respondents to identify and describe any further impacts.**Impact Assessment respondents should consider and provide detail of any additional effect e.g. will the schedule/milestones be directly impacted; will the schedule/milestones be indirectly impacted.* *Where possible, contextual information should be included e.g. the change will delay the project by X days; the change will require additional resource to complete (though detail resource in resource section); the delay can/cannot be recovered by condensing Y activity.* |
| **Effect on costs***The change has no discernible impact on Programme costs for the Central Programme and Avanade (DIP Service Provider). Respondents need to advise if the prospective change will have an impact on their costs, and if there is a significant impact then how would that materialise.* |
| *<Delete as appropriate>:* **Agree Disagree Abstain** |
| *Impact Assessment respondents to add supporting commentary to support their selection. Where possible, Impact Assessment respondents to identify and describe any further impacts.**Impact Assessment respondents should consider and provide detail of any additional effect e.g. will the change cause a loss of income; will the change cause additional cost; will the change cause a reprofiling of cost?* *Where possible, contextual information should be included e.g. whether it is capital or operating expenditure that will be affected; what period costs will be affected in; what the rough order of magnitude of the cost impact will be and if organisation will be able to absorb it?* |
| **Effect on resources***n/a* |
| *<Delete as appropriate>:* **Agree Disagree Abstain** |
| *Impact Assessment respondents to add supporting commentary to support their selection. Where possible, Impact Assessment respondents to identify and describe any further impacts.* *Impact Assessment respondents should consider and provide detail of any additional effect e.g. will there be an impact on tools or equipment; will there be an impact on staff capacity; will there be an impact on staff skills or capability?* *Where possible, contextual information should be included e.g. the change will require X additional staff for Y period of time; the change requires Z training or support.* |
| **Effect on contract***n/a* |
| *<Delete as appropriate>:* **Agree Disagree Abstain** |
| *Impact Assessment respondents to add supporting commentary to support their selection. Where possible, Impact Assessment respondents to identify and describe any further impacts.* *Impact Assessment respondents should consider and provide detail of any additional effect e.g. whether there will be an impact on contracts with sub-contractors; whether there will be an impact on contracts with vendors; whether there will be an impact on contracts with regulators/ESO.* *Where possible, contextual information should be included e.g. the changes will require new contracts to be created; the changes will variations to existing contracts; the changes will affect ability to meet contract requirements.* |
| **Risks***The Programme intends to mitigate the risks of the upgrade by producing a release of the Swagger that solely contains the changes required to implement the upgrade. This will provide Programme Participants to make a clear comparison between 3.1 and 3.0. The Programme will only move onto the new 3.1 standard once all parties have had a chance to consume and accept the updated specification. If the changes present issues then there is a clear path to unwind the change, i.e. fall back to the previous version.* |
| *<Delete as appropriate>:* **Agree Disagree Abstain** |
| *Impact Assessment respondents to add supporting commentary to support their selection. Where possible, Impact Assessment respondents to identify and describe any further impacts.* *Impact Assessment respondents should consider and provide detail of any additional effect e.g. will existing risks be affected; will new risks be created?**Where possible, contextual information should be included e.g. the change will affect the likelihood of a risk occurring, the change will affect the impact the risk would have, the change will require additional controls and mitigation.* |

### Part C.2 – Impact Assessment Recommendation

### Note – *This section must be completed initially by the Change Raiser and then by Programme Participants as part of the full Impact Assessment.*

**Guidance – The primary reporting metric of the Impact Assessment is the recommendation response. The consolidated response will be presented to the relevant governance group(s) and decision maker(s) with the totals for ‘Agree’, ‘Disagree’ or ‘Abstain’. As such, please ensure this section is completed before the form is returned to MHHS PMO. Provide detailed rationale and evidence in the commentary field.**

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| Part C.2 – Impact Assessment Recommendation (mandatory) |
| **Recommendation***Change Raiser to provide initial recommendation.***It is recommended by the Change Raiser the change is approved.** |
| *<Delete as appropriate>:* **Agree Disagree Abstain** |
| *Impact Assessment respondents to add supporting commentary to support their selection.* |

**Impact assessment done by:** <Name>

**Guidance*: If you are a third party responding on behalf of another Programme Participant, please state this in your response.***

**Impact assessment completed on behalf of:** <Name>

### Part D – Change approval and decision

**Guidance*: The approvals section will be completed by the MHHS PMO once the Impact Assessment has been reviewed.***

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| Part D - Approvals |
| **Decision authority level**<Based on the impact assessment, state who is required to make a decision concerning this change> |

**Guidance** - ***This section will be completed by the MHHS PMO and Change Owner following the review of the impact assessment and decision reached by the SRO.***

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| Part D – Change decision |
| Decision: |       | Date |       |
| Approvers: |       |  |  |
| Change Owner: |       |
| Action: |       |
| **Changed Items** | **Pre-change version** | **Revised version** |
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### Part E – Implementation completion

**Guidance *- This section will be completed by the MHHS PMO at the end of the post-implementation process.***

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| Part E – Implementation completion |
| Comment |       | Date |       |

**Guidance *– The Closure Checklist in MHHS DEL175 Change Log must also be completed by MHHS PMO at this stage.***

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|      Checklist Completed | Completed by      |
| Yes/No |  |

**Guidance – *This section will be completed by the MHHS PMO at the end of the post-implementation process and should be* used to add any appropriate references of the change once it has been completed.**

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| References |
| **Ref** | **Document number** | **Description** |
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