

# 02.08.04 Technical Description: Interoperable Data Export by HelloBetter for Digital Health Applications

This is a document according to the quality management system of GET.ON Institut für Online Gesundheitstrainings GmbH. The process for changing this document is described in [SOP-000 Document control](#)

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## Introduction

This document aims to describe the interoperable data export format used by HelloBetter (eine eingetragene Marke der GET.ON Institut für Online Gesundheitstrainings GmbH) for its products that are recognized as DiGA (Digital health applications).

### Scope and Disclaimer

This document describes the interoperable data export of HelloBetter's DiGA products. The data export format explained here follows the same basic principles and applies to all present and future DiGA products developed by HelloBetter. For interoperable export, HelloBetter relies on the FHIR® standard published by HL7®. HelloBetter follows the openly published FHIR® Specification v4.0.1: R4 without further profiling and generates a valid json file as export. The JavaScript Object Notation (JSON) is a standardized, open, text-based format for displaying structured data.

## Exporting Data

In the settings page of each product, patients can export relevant data as a single json file. For this purpose, the FHIR® Bundle resource is used. Each bundle starts with a data entry structured according to the FHIR® Patient resource, which features information on the data subject. Further information regarding the data subject is reported in entries that follow the FHIR® Observation resource. This resource is used to report all clinically relevant findings. Entries in this resource can be categorized as "survey" based on HL7's observation category code system. The entries represented as observations differ based on the content of the product. Following the recommendations of the FHIR® standard, each entry is coded using Logical Observation Identifiers Names and Codes (LOINC). Where a unique LOINC code is not available for a given survey, the generic LOINC code for patient reported outcomes is used and a text description of the survey is provided. Furthermore, details regarding the interpretation are provided with LOINC codes and text descriptions.

### Resources used

Resource	Type	Cardinality	Description
Bundle	collection	1..1	A bundle is a unique resource that can be used to store a collection of other resources
Patient	subject	1..1	Base resource that is used to store patient's contact data such as self-reported username and email address
Observation	survey	0..*	Entries consisting of patient reported outcomes with scores calculated by the system based on responses to regular surveys conducted by the program.

### Sample Export

```
{
```

```
"resourceType": "Bundle",
"identifier": {
  "use": "official",
  "value": "DIGA",
  "period": {
    "start": "2021-09-15T16:02:01.590Z"
  }
},
"type": "collection",
"timestamp": "2021-09-15T16:02:01.590Z",
"entry": [
  {
    "fullUrl": "6141f7fae3c602004ebae526",
    "resource": {
      "resourceType": "Patient",
      "identifier": [
        {
          "use": "official",
          "value": "6141f7fae3c602004ebae526",
          "period": {
            "start": "2021-09-15T13:41:14.350Z"
          }
        }
      ],
      "id": "6141f7fae3c602004ebae526",
      "active": true,
      "name": [
        {
          "given": "Mateo",
          "family": "Vidal",
          "text": "Mateo Vidal",
          "use": "usual"
        }
      ],
      "telecom": [
        {
          "system": "email",
          "value": "mateo@example.com",
          "use": "work"
        }
      ],
      "gender": "male",
      "birthDate": "1993-06-01T00:00:00.000Z"
    }
  },
  {
    "resource": {
      "resourceType": "Observation",
      "status": "final",
      "category": [
```

```

    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem
/observation-category",
          "code": "survey",
          "display": "Survey"
        }
      ]
    }
  ],
  "subject": {
    "reference": "Patient/6141f7fae3c602004ebae526",
    "display": "Mateo Vidal",
    "type": "patient"
  },
  "valueInteger": 8,
  "code": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "94328-2",
        "display": "Patient Health Questionnaire 8 item (PHQ-8)
total score [Reported]"
      }
    ],
    "text": "PHQ-8 depression assessment panel."
  },
  "interpretation": [
    {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "89193-7",
          "display": "Patient reported outcome measure score
interpretation"
        }
      ],
      "text": "Score range from 0 to 24. Scores of 5, 10, 15, and
20 represent cut-points for mild, moderate, moderately severe and
severe depression."
    }
  ]
},
{
  "resource": {
    "resourceType": "Observation",
    "status": "final",
    "category": [

```

```

    {
      "coding": [
        {
          "system": "http://terminology.hl7.org/CodeSystem
/observation-category",
          "code": "survey",
          "display": "Survey"
        }
      ]
    }
  ],
  "subject": {
    "reference": "Patient/6141f7fae3c602004ebae526",
    "display": "Mateo Vidal",
    "type": "patient"
  },
  "valueInteger": 7,
  "code": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "89196-0",
        "display": "Patient reported outcome measure panel"
      }
    ],
    "text": "PSS-4 perceived stress scale assessment panel."
  },
  "interpretation": [
    {
      "coding": [
        {
          "system": "http://loinc.org",
          "code": "89193-7",
          "display": "Patient reported outcome measure score
interpretation"
        }
      ],
      "text": "Scores range from 0 to 27, where higher values are
correlated to more stress."
    }
  ]
},
{
  "resource": {
    "resourceType": "Observation",
    "status": "final",
    "category": [
      {
        "coding": [

```

```

        {
            "system": "http://terminology.hl7.org/CodeSystem
/observation-category",
            "code": "survey",
            "display": "Survey"
        }
    ]
}
],
"subject": {
    "reference": "Patient/6141f7fae3c602004ebae526",
    "display": "Mateo Vidal",
    "type": "patient"
},
"valueInteger": 8,
"code": {
    "coding": [
        {
            "system": "http://loinc.org",
            "code": "70274-6",
            "display": "Generalized anxiety disorder 7 item (GAD-7)
total score [Reported.PHQ]"
        }
    ],
    "text": "Generalized anxiety disorder 7 item total score"
},
"interpretation": [
    {
        "coding": [
            {
                "system": "http://loinc.org",
                "code": "89193-7",
                "display": "Patient reported outcome measure score
interpretation"
            }
        ],
        "text": "The GAD-7 scale score ranges from 0 to 21. A score
of 10 or greater represents a reasonable cut point for identifying
cases of GAD. Cut points of 5, 10, and 15 might be interpreted as
representing mild, moderate, and severe levels of anxiety."
    }
]
}
]
}
]
}

```

Revision	Change	Created by/on
1	Initial version of the document	@ Amit Gupta 16.09.2021

Information on reviews and approvals can be found on the *Workflow History* section of this page