

Summary

Added `qualificationLevel` field

Added `fieldOfStudy` field

Added `attainmentDate` date-time string

Added field to transcript: `languageMedium`

Added fields to recipient: `studentId`, `nric`, `fin`

Background: Schema 1.5 for Singaporean institutes

Following the feedback from Workforce Singapore Agency (WSG), SkillsFuture Singapore Agency (SSG) and Singapore Examinations and Assessment Board (SEAB), the OpenCerts schema will be updated to version 1.5 with the above mentioned non-breaking changes. The rest of this document will detail the examples and treatment of the fields.

qualificationLevel

Example:

```
1  "qualificationLevel": [{
2    "frameworkName": "singapore/ssec-eqa",
3    "frameworkVersion": "2015",
4    "code": "51",
5    "description": "Polytechnic Diploma"
6  }]
```

This field exists on the top level of the certificate file, and may be used to indicate what qualification level the certificate confers upon the recipient.

In the Singaporean context, reference should be taken from [SSEC 2015](#)

Accordingly, `frameworkName` and `frameworkVersion` should be exactly “singapore/ssec-eqa” and “2015”.

For code, please use the 2 digit codes for EQA.

Description will be the corresponding description specified by the SSEC 2015 document.

In the case where you would like to indicate that your qualification is equivalent to another region’s framework (ISCED for example), you may also include multiple `qualificationLevel` objects in the field.

In the case where your certificate confers multiple qualifications upon the recipient, you may likewise include multiple objects in qualificationLevel.

Example:

```
1  "qualificationLevel": [{
2    "frameworkName": "singapore/ssec-eqa",
3    "frameworkVersion": "2015",
4    "code": "51",
5    "description": "Polytechnic Diploma"
6  },
7  {
8    "frameworkName": "international/isced",
9    "frameworkVersion": "2011",
10   "code": "55",
11   "description": "(Short-cycle tertiary education) Vocational"
12  }]

```

fieldOfStudy

Example:

```
1  "fieldOfStudy": [
2    {
3      "frameworkName": "singapore/ssec-fos",
4      "frameworkVersion": "2015",
5      "code": "0897",
6      "description": "Biomedical Science"
7    }
8  ],

```

This field exists on the top level of the certificate file, and may be used to indicate what field of study the course has covered.

In the Singaporean context, reference should be taken from [SSEC 2015](#)

Accordingly, frameworkName and frameworkVersion should be exactly "singapore/ssec-fos" and "2015".

For code, please use the 4 digit codes for FOS.

Description will be the corresponding description specified by the SSEC 2015 document.

In the case that multiple fields of study were covered by the course, you may include multiple objects in the field.

Example:

```
1  "fieldOfStudy": [
2    {
3      "frameworkName": "singapore/ssec-fos",
4      "frameworkVersion": "2015",

```

```

5      "code": "0897",
6      "description": "Biomedical Science"
7    },
8    {
9      "frameworkName": "singapore/ssec-fos",
10     "frameworkVersion": "2015",
11     "code": "0713",
12     "description": "Biochemistry"
13   }
14 ],

```

attainmentDate

Example:

```
1  "attainmentDate": "2018-07-25T00:00:00+08:00"
```

The date that the qualification was conferred upon the recipient

languageMedium

Example

```

1  "transcript": [
2    {
3      "name": "Bitcoin",
4      "grade": "A+",
5      "courseCredit": 3,
6      "courseCode": "BTC-01",
7      "examinationDate": "2018-08-01T00:00:00+08:00",
8      "url": "https://blockchainacademy.com/subject/BTC-01",
9      "description": "Everything and more about bitcoin!",
10     "languageMedium": "english"
11   }
12   ...
13 ]

```

The language in which the course was conducted in.

studentId nric fin

Example:

```

1  "recipient": {
2    "name": "Mr Blockchain",
3    "did": "DID:SG-NRIC:S99999999A",

```

```

4      "email": "mr-blockchain@gmail.com",
5      "phone": "+65 88888888",
6      "additionalProp": "0x0000000000000000000000000000000000000000000000000000000000000000",
7      "nric": "S0000001Z",
8      "fin": "F0000001Z",
9      "studentId": "1232"
10   }

```

Some extra data fields that we've seen around but were not standardised previously: nric, fin, studentId

No validation is performed on these fields as they are simply strings. Please perform your own validation!

Schema diff between 1.4 and 1.5

```

1  {
2    "id": "opencertificate/1.4",
3    "schema": "http://json-schema.org/draft-07/schema",
4    "type": "object",
5    "properties": {
6      "id": {
7        "type": "string"
8      },
9      "template": {
10       "type": "string"
11     },
12     "description": {
13       "type": "string"
14     },
15     "issuedOn": {
16       "type": "string",
17       "format": "date-time"
18     },
19     "expiresOn": {
20       "type": "string",
21       "format": "date-time"
22     },
23     "admissionDate": {
24       "type": "string",
25       "format": "date-time"
26     },
27     "graduationDate": {
28       "type": "string",
29       "format": "date-time"
30     },
31     "cumulativeScore": {
32       "type": "number"
33     },
34     "name": {
35       "type": "string"
36     },
37     "issuers": {
38       "type": "array",
39       "items": {
40         "type": "object",
41         "properties": {
42           "name": {
43             "type": "string"
44           },
45           "did": {
46             "type": "string"
47           },
48           "url": {
49             "type": "string",
50             "format": "url"
51           },
52           "email": {
53             "type": "string",
54             "format": "email"
55           },
56           "phone": {
57             "type": "string"
58           },
59           "certificateStore": {
60             "type": "string"
61           }
62         }
63       }
64     }
65   }

```

```

1  {
2    "id": "opencertificate/1.5",
3    "schema": "http://json-schema.org/draft-07/schema",
4    "type": "object",
5    "properties": {
6      "id": {
7        "type": "string"
8      },
9      "template": {
10       "type": "string"
11     },
12     "description": {
13       "type": "string"
14     },
15     "issuedOn": {
16       "type": "string",
17       "format": "date-time"
18     },
19     "expiresOn": {
20       "type": "string",
21       "format": "date-time"
22     },
23     "admissionDate": {
24       "type": "string",
25       "format": "date-time"
26     },
27     "graduationDate": {
28       "type": "string",
29       "format": "date-time"
30     },
31     "description": "The date that this certificate was issued by the issuer(s)",
32     "description": "The date that this student graduated from the course",
33     "description": "The date that this qualification was awarded to the recipient",
34     "description": "This is an array of objects used to attach descriptors from frameworks such as Singapore's SSEC-EQA or the International",
35     "type": "array",
36     "items": {
37       "type": "object",
38       "required": [
39         "frameworkName",
40         "frameworkVersion",
41         "code",
42         "description"
43       ],
44       "properties": {
45         "frameworkName": {
46           "type": "string",
47           "examples": ["singapore/ssec-eqa", "international/isced-r"]
48         },
49         "frameworkVersion": {
50           "type": "string",
51           "examples": ["2015", "2011"]
52         },
53         "code": {
54           "type": "string",
55           "examples": ["51", "55"]
56         },
57         "description": {
58           "type": "string",
59           "examples": [
60             "Polytechnic Diploma",
61             "(Short-cycle tertiary education) Vocational"
62           ]
63         }
64       }
65     },
66     "fieldOfStudy": {
67       "type": "array",
68       "description": "This is an array of objects used to attach descriptors from frameworks such as Singapore's SSEC-FOS or the International",
69       "items": {
70         "type": "object",
71         "required": [
72           "frameworkName",
73           "frameworkVersion",
74           "code",
75           "description"
76         ],
77         "properties": {
78           "frameworkName": {
79             "type": "string",
80             "description": "Prepend the actual framework name with the scope of the framework",
81             "examples": ["singapore/ssec-fos", "international/isced-r"]
82           },
83           "frameworkVersion": {
84             "type": "string",
85             "examples": ["2015", "2013"]
86           },
87           "code": {
88             "type": "string",
89             "examples": ["009"]
90           },
91           "description": {
92             "type": "string",
93             "examples": ["Biomedical Science"]
94           }
95         }
96       }
97     },
98     "cumulativeScore": {
99       "type": "number"
100     },
101     "name": {
102       "type": "string"
103     },
104     "issuers": {
105       "type": "array",
106       "items": {
107         "type": "object",
108         "properties": {
109           "name": {
110             "type": "string"
111           },
112           "did": {
113             "type": "string"
114           },
115           "url": {
116             "type": "string",
117             "format": "url"
118           },
119           "email": {
120             "type": "string",
121             "format": "email"
122           },
123           "phone": {
124             "type": "string"
125           },
126           "certificateStore": {
127             "type": "string"
128           }
129         }
130       }
131     }
132   }

```

```
62 },
63 "required": ["name", "certificateStore"],
64 "additionalProperties": true
65 },
66 "minItems": 1
67 },
68 "recipient": {
69   "type": "object",
70   "properties": {
71     "name": {
72       "type": "string"
73     },
74     "did": {
75       "type": "string"
76     },
77     "url": {
78       "type": "string"
79     },
80     "email": {
81       "type": "string"
82     },
83     "phone": {
84       "type": "string"
85     }
86   }
87 },
88 "required": ["name"],
89 "additionalProperties": true
90 },
91 "transcript": {
92   "type": "array",
93   "items": {
94     "type": "object",
95     "properties": {
96       "name": {
97         "type": "string"
98       },
99       "score": {
100         "type": ["number", "string"]
101       },
102       "grade": {
103         "type": ["number", "string"]
104       },
105       "courseCredit": {
106         "type": ["number", "string"]
107       },
108       "courseCode": {
109         "type": "string"
110       },
111       "examinationDate": {
112         "type": "string",
113         "format": "date-time"
114       },
115       "url": {
116         "type": "string"
117       },
118       "description": {
119         "type": "string"
120       }
121     }
122   },
123   "required": ["name"]
124 },
125 "additionalData": {
126   "type": "object"
127 },
128 "required": ["id", "name", "issuedOn", "issuers", "recipient"],
129 "additionalProperties": false
130 }
```

```
131 },
132 "required": ["name", "certificateStore"],
133 "additionalProperties": true
134 },
135 "minItems": 1
136 },
137 "recipient": {
138   "type": "object",
139   "properties": {
140     "name": {
141       "type": "string"
142     },
143     "did": {
144       "type": "string"
145     },
146     "url": {
147       "type": "string"
148     },
149     "email": {
150       "type": "string"
151     },
152     "phone": {
153       "type": "string"
154     },
155     "nric": {
156       "type": "string"
157     },
158     "fine": {
159       "type": "string"
160     },
161     "studentId": {
162       "type": "string"
163     }
164   }
165 },
166 "required": ["name"],
167 "additionalProperties": true
168 },
169 "transcript": {
170   "type": "array",
171   "items": {
172     "type": "object",
173     "properties": {
174       "name": {
175         "type": "string"
176       },
177       "score": {
178         "type": ["number", "string"]
179       },
180       "grade": {
181         "type": ["number", "string"]
182       },
183       "courseCredit": {
184         "type": ["number", "string"]
185       },
186       "courseCode": {
187         "type": "string"
188       },
189       "examinationDate": {
190         "type": "string",
191         "format": "date-time"
192       },
193       "url": {
194         "type": "string"
195       },
196       "description": {
197         "type": "string"
198       },
199       "languageMedium": {
200         "description": "Language that the course was undertaken in",
201         "type": "string"
202       }
203     }
204   },
205   "required": ["name"]
206 },
207 "additionalData": {
208   "type": "object"
209 },
210 "required": ["id", "name", "issuedOn", "issuers", "recipient"],
211 "additionalProperties": false
212 }
```