firely

HL7 FHIR R4

Resource

Name	Card.
Resource	
id	0..1
meta	0..1
implicitRules	0..1
language	0..1

Domain Resource

Name	Card.
DomainResource	
text	0..1
contained	0..*
extension	0..*
modifierExtension	0..*

Meta

Name	Card.
Meta	
versionId	0..1
lastUpdated	0..1
source	0..1
profile	0..*
security	0..*
tag	0..*

Terminology Systems

SNOMED CT
http://snomed.info/sct
LOINC
http://loinc.org
UCUM
http://unitsofmeasure.org
Version 2 table code
http://terminology.hl7.org/CodeSystem/v2-[X]
Version 3 code system
http://terminology.hl7.org/CodeSystem/v3-[X]

MIME Types

JSON
application/fhir+json
XML
application/fhir+xml
RDF
application/fhir+turtle

Search

Parameter Types

Base search URL   base-url / resource ? parameter & parameter & ..

```
https://vonk.fire.ly/Patient?name=John
```

number   field (:modifier)=(comparator)number

```
length=27
```

date   field (:modifier) = comparator yyyy-mm-ddThh:mm:ss[Z|(+|-)hh:mm]

```
birthdate=1964-12-10
```

string   field (:modifier) = text

```
name=John
name:exact=John-William
```

token   field = system | code

```
gender=female
gender=http://hl7.org/fhir/v3/AdministrativeGender|female
gender=|female
```

Reference   field (:modifier) = id

```
subject:Patient=23
```

Quantity   field = (comparator) number | system | code

```
value=5.4|http://unitsofmeasure.org|mg
value=lt5.4|http://unitsofmeasure.org|mg
```

Composite   field = value , value
                       field = state$value,state$value

```
state-on-date=new$2013-05-04,active$2013-05-05
```

uri   field (:modifier) = uri

```
uri:below=http://acme.org/fhir/
```

Parameters for all resources

_id	_id=23
_lastUpdated	_lastUpdated=gt2010-10-01
_tag	_tag=http://acme.org/codes|needs-review
_profile	_profile=http://hl7.org/fhir/StructureDefinition/lipid
_security	_security = http://hl7.org/fhir/v3/ActCode|CEL
_text	_text=(bone OR liver) and metastases
_content	_content=(bone OR liver) and metastases
_list	_list=42
_has	_has:Observation:patient:code=1234-5
_type	_type=Observation,Condition
_query	_query=name&parameters

Search result parameters

_include	_include=MedicationPrescription:patient
_revinclude	_revinclude=Provenance:target
_count	_count=50
_sort	_sort=status,-date,category
_summary	_summary=true	text	data	count	false
_elements	_elements=identifier,active,link
_contained	_contained = true	false	both
_containedType	_containedType = container	contained

Chained parameters

```
GET [base-url]/DiagnosticReport?subject.name=peter
```

Bundle

Name	Card.
Bundle	
identifier	0..1
type	1..1
timestamp	0..1
total	0..1
link	0..*
relation	1..1
url	1..1
entry	0..*
link	0..*
fullUrl	0..1
resource	0..1
search	0..1
mode	0..1
score	0..1
request	0..1
method	1..1
url	1..1
ifNoneMatch	0..1
ifModifiedSince	0..1
ifMatch	0..1
ifNoneExist	0..1
response	0..1
status	1..1
location	0..1
etag	0..1
lastModified	0..1
outcome	0..1
signature	0..1

Operations   For more see:

https://hl7.org/fhir/r4/operationslist.html

Validate a resource
```
[base]/[Resource]/$validate
[base]/[Resource]/[id]/$validate
```

Terminology operations
```
[base]/ValueSet/[id]/$expand
[base]/ValueSet/[id]/$validate-code
[base]/CodeSystem/$lookup
[base]/CodeSystem/[id]/$subsumes
[base]/CodeSystem/[id]/$find-matches
```

Fetch records
```
[base]/Patient/[id]/$everything
```

Meta Operations
```
[base]/$meta
[base]/[Resource]/$meta
[base]/[Resource]/[id]/$meta
[base]/[Resource]/[id]/$meta-add
[base]/[Resource]/[id]/$meta-delete
```

Generate a Document
```
[base]/Composition/[id]/$document
```

Process Message
```
[base]/$process-message
```

Find a functional List
```
[base]/List/$find
```

ConceptMap operations
```
[base]/ConceptMap/$translate
[base]/ConceptMap/[id]/$translate
```

Closure Table Maintenance
```
[base]/$closure
```

Questionnaire operations
```
[base]/StructureDefinition/$questionnaire
[base]/StructureDefinition/[id]/$questionnaire
```

Interactions

Instance

READ	GET	[base]/[type]/[id]
VREAD	GET	[base]/[type]/[id]/_history/[vid]
UPDATE	PUT	[base]/[type]/[id]
DELETE	DELETE	[base]/[type]/[id]
HISTORY	GET	[base]/[type]/[id]/_history

Type level

CREATE	POST	[base]/[type]
SEARCH	GET	[base]/[type]?[parameters]
HISTORY	GET	[base]/[type]/_history

Whole System

CAPABILITY	GET	[base]/metadata
BATCH TRANSACTION	POST	[base]/
HISTORY	GET	[base]/_history
SEARCH	GET	[base]?[parameters]

Conditional Interactions

CREATE	POST	If-None-Exist: [search parameters] No matches: Create 1 match: 200 OK Multi matches: 412 Precondition Failed
UPDATE	PUT	[base-url] /[type]/?[search parameters] No matches: Create 1 match: Update Multi matches: 412 Precondition Failed
DELETE	DELETE	[base-url] /[type]/?[search parameters] No matched: Delete 1 match: Delete Multi matches: 412 Precondition Failed

Comparators for Search

```
[parameter]=100      equal 100 in range [99.5..100.5]
[parameter]=100.00   equal 100 in range [99.995..100.005]
[parameter]=lt100    less than 100
[parameter]=le100    less or equal to 100
[parameter]=gt100    greater than 100
[parameter]=ge100    greater or equal to 100
[parameter]=ne100    not equal to 100
```