

Tartuntatautirekisterin avoin data, JSON-rajapinta-esimerkkejä

Lyhyesti avoimen datan muodosta

Lainaus THL:n avoimen datan dokumentaatiosta <https://yhteistyotilat.fi/wiki08/x/RoCkAQ>:

Avoim data on moniulotteista, eli koostuu ulottuvuuksista (engl. dimensions) ja mittareista (engl. measures). Ulottuvudet ovat asioita, joiden suhteen tietoa tarkastellaan, kuten aika, alue, ikä ja sukupuoli. Mittarit ovat mitattuja tai laskettuja suureita, jotka kertovat jostakin asiasta tai ilmiöstä, kuten sairaalassa hoidettujen henkilöiden lukumäärä tai toimeentulotukea saaneiden kotitalouksien prosenttiosuus kaikista kotitalouksista.<...>Rajapinnan kautta saatava moniulotteinen data ulottuvuuksineen vaihtelee aineistojen mukaan. Käytetyt ulottuvuudetkin ovat siis aineistosta riippuvaisia. Avoin data voi olla monikielistä. Se on voitu ryhmitellä useiksi loogiseksi kokonaisuudeksi eli faktoiksi eli kuutioiksi.<...>Rajapinta on REST-tyyppinen.<...>Rajapintakutsu tuottaa JSON-dokumentin, jossa listataan valintojen mukaan määritelty kuutiodata json-stat muodossa.

Kuukausi/sairaanhoitopiiri-taso

Tartuntatautirekisteristä saa eri tautien tilastoja kuukausi ja sairaanhoitopiiri-tasolla. Www-selailtava tilastokuutio, jossa on kaikkien tautien tiedot, löytyy osoitteesta https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp. Yksittäisen taudin www-selailtaviin tilastoihin pääsee myös suorilla linkeillä, esimerkiksi borrelioosin tilastot: https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp?row=area-12260&column=time-12059&filter=reportgroup-12465. Ahvenanmaalla oli vuonna 1996 97 borrelioositapausta:

| Raportointiryhmä | | | | |
|----------------------------------|------|------|------|--|
| --Lymen borrelioosi | | | | |
| Tapauksia | 1995 | 1996 | 1997 | |
| Ahvenanmaa | 65 | 97 | 85 | |
| Etelä-Karjalan sairaanhoitopiiri | 18 | 25 | 10 | |

Tartuntatautirekisterin avoimen datan "yleisosoite" <https://sampo.thl.fi/view?what=sdf&subject=ttr&hydra=shp> tuottaa JSON-vastauksena:

```
{ "link": { "item": [ { "href": "https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp.json", "label": "Tartuntatautirekisterin tilastotietokanta", "class": "dataset" }, { "href": "https://sampo.thl.fi/pivot/prod/sv/ttr/shp/fact_shp.json", "label": "Registret för smittsamma sjukdomar, statistisk databas", "class": "dataset" } ] }, "label": "shp", "version": "2.0", "class": "collection", "updated": "2016-10-14" }
```

Osoitteen https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp.json tuottamassa JSON-vastauksessa on tarkempia tietoja avoimen datan parametrisoinnista. Vastauksesta löytyy mm. borrelioosin tunniste **12465** (label "12465": "--Lymen borrelioosi"). Lopulta saadaan muodostettua parametreilla osoite, josta borrelioosin sairaanhoitopiiri- ja kuukausi- tason tapauslukumäärän saa **json-stat**-muodossa:

https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp.json?row=area-12260&column=time-12059&filter=reportgroup-12465&filter=measure-73006

Vastauksesta löytyy mm. vuoden 1996 Ahvenanmaan tapauslukumäärä:

```
"value": {
  "0": 65,
  "1": 97,
  "2": 85,
```

Vaihtamalla osoitteen viimeiseksi filter-parametriksi "measure-73008" saadaan mittariksi tapauslukumäärän sijasta ilmaantuvuus:

https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp.json?row=area-12260&column=time-12059&filter=reportgroup-12465&filter=measure-73008

```
"value": {
  "0": 0,
  "1": 384.89,
  "2": 336.54,
```

Borrelioositapausten ilmaantuvuus Ahvenanmaalla vuonna 1996 oli siis 384,89.

Viikko/kuntataso

Case Helsinki:

Helsingin borrelioositapausten lukumäärän vuodelta 2009 viikolta 39 saa tilastokäyttöliittymässä osoitteesta:

https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp?row=area-128732&column=time-130374&filter=reportgroup-12465&filter=measure-73006

| | | |
|-----------|--|----------|
| Tapauksia | | V-200939 |
| | | |
| Helsinki | | 8 |

Tapauksia oli 8. Saman tiedon JSON-vastauksena saa osoitteesta:

https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp.json?row=area-128732&column=time-130374&filter=reportgroup-12465&filter=measure-73006

JSON-vastaus:

```
{
  "dataset": {
    "version": "2.0",
    "class": "dataset",
    "label": "Tartuntatautirekisterin tilastotietokanta",
    "dimension": {
      "id": [
        "area", "time"
      ],
      "size": [
        1, 1
      ],
      "area": {
        "category": {
          "index": {
            "128732": 0
          },
          "label": {
            "128732": "Helsinki"
          }
        }
      },
      "time": {
        "category": {
          "index": {
            "130374": 0
          },
          "label": {
            "130374": "V-200939"
          }
        }
      }
    },
    "value": {
      "0": 8
    }
  }
}
```

Tässä on käytetty seuraavia parametreja:

| Parametri | Selitys |
|--------------------------|---|
| area-128732 | Alue: <i>Helsinki</i> |
| time-130374 | Aika: <i>Vuosi 2009, viikko 39</i> |
| filter=reportgroup-12465 | Raportointiryhmä: <i>"-Lymen borrelioosi"</i> |
| filter=measure-73006 | Mittari: <i>Tapausmäärä</i> |

Seuraavalla JSON-kutsulla saa listan tartuntatautirekisterin tilastokuution ulottuvuuksista:

https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp.dimensions.json

Vastaus on JSONP-tyyppinen sanoma, josta löytyy mm.sairaanhoitopiirien ja kuntien tunnistetiedot:

```
<...>
{"id": "area", "label": "Alue", "children": [
  {"id": "200000", "sid": 12260, "label": "Koko maa",
  "stage": "root", "code": "358", "properties": { "is": "{}" }, "children": [
  {"id": "202022", "sid": 12327, "label": "Ahvenanmaa",
  "stage": "healthcaredistrict", "code": "2022", "children": [
  {"id": "200035", "sid": 128754, "label": "Brändö", "stage": "municipality", "code": "035", "children": []},
  {"id": "200043", "sid": 128933, "label": "Eckerö", "stage": "municipality", "code": "043", "children": []},
  {"id": "200060", "sid": 128873, "label": "Finström", "stage": "municipality", "code": "060", "children": []},
  {"id": "200062", "sid": 129027, "label": "Föglö", "stage": "municipality", "code": "062", "children": []},
  {"id": "200065", "sid": 128838, "label": "Geta", "stage": "municipality", "code": "065", "children": []},
  {"id": "200076", "sid": 128908, "label": "Hammarland", "stage": "municipality", "code": "076", "children": []},
  {"id": "200170", "sid": 128853, "label": "Jomala", "stage": "municipality", "code": "170", "children": []},
  {"id": "200295", "sid": 129001, "label": "Kumlinge", "stage": "municipality", "code": "295", "children": []},
  {"id": "200318", "sid": 128840, "label": "Kökar", "stage": "municipality", "code": "318", "children": []},
  {"id": "200417", "sid": 128920, "label": "Lemland", "stage": "municipality", "code": "417", "children": []},
  {"id": "200438", "sid": 128984, "label": "Lumparland", "stage": "municipality", "code": "438", "children": []},
  {"id": "200478", "sid": 128940, "label": "Maarianhamina", "stage":
  "municipality", "code": "478", "children": []},
  {"id": "200736", "sid": 128916, "label": "Saltvik", "stage": "municipality", "code": "736", "children": []},
  {"id": "200766", "sid": 128879, "label": "Sottunga", "stage": "municipality", "code": "766", "children": []},
  {"id": "200771", "sid": 128885, "label": "Sund", "stage": "municipality", "code": "771", "children": []},
  {"id": "200941", "sid": 128813, "label": "Vårdö", "stage": "municipality", "code": "941", "children": []}],
  <...>
  {"id": "202025", "sid": 12111, "label": "Helsingin ja Uudenmaan sairaanhoitopiiri",
  "stage": "healthcaredistrict", "code": "2025", "children": [
  {"id": "200018", "sid": 128759, "label": "Askola", "stage": "municipality", "code": "018", "children": []},
  {"id": "200049", "sid": 128924, "label": "Espoo", "stage": "municipality", "code": "049", "children": []},
  {"id": "200078", "sid": 128836, "label": "Hanko", "stage": "municipality", "code": "078", "children": []},
  {"id": "200091", "sid": 128732, "label": "Helsinki", "stage": "municipality", "code": "091", "children": []},
  <...>
  <...>
  {"id": "time", "label": "time", "children": [
  {"id": "100000", "sid": 12059, "label": "Aika",
  "stage": "root", "code": "0", "properties": { "is": "{}" }, "children": [
  {"id": "101995", "sid": 12307, "label": "1995", "stage": "year", "code": "1995", "children": [
  {"id": "1199501", "sid": 12318, "label": "1995-01", "stage": "month", "code": "199501", "children": [
  {"id": "100199501", "sid": 129350, "label": "V-199501", "stage": "week", "code": "199501", "children": []},
  {"id": "100199502", "sid": 129345, "label": "V-199502", "stage": "week", "code": "199502", "children": []},
  {"id": "100199503", "sid": 129375, "label": "V-199503", "stage": "week", "code": "199503", "children": []},
  {"id": "100199504", "sid": 129376, "label": "V-199504", "stage": "week", "code": "199504", "children": []},
  {"id": "100199505", "sid": 129362, "label": "V-199505", "stage": "week", "code": "199505", "children": []}],
  <...>
  {"id": "102009", "sid": 12241, "label": "2009", "stage": "year", "code": "2009", "children": [
  {"id": "1200901", "sid": 12362, "label": "2009-01", "stage": "month", "code": "200901", "children": [
  {"id": "100200902", "sid": 130327, "label": "V-200902", "stage": "week", "code": "200902", "children": []},
  {"id": "100200903", "sid": 130415, "label": "V-200903", "stage": "week", "code": "200903", "children": []},
  {"id": "100200904", "sid": 129941, "label": "V-200904", "stage": "week", "code": "200904", "children": []},
  {"id": "100200905", "sid": 130211, "label": "V-200905", "stage": "week", "code": "200905", "children": []}],
  <...>
  {"id": "1200909", "sid": 12170, "label": "2009-09", "stage": "month", "code": "200909", "children": [
  {"id": "100200937", "sid": 129436, "label": "V-200937", "stage": "week", "code": "200937", "children": []},
  {"id": "100200938", "sid": 129830, "label": "V-200938", "stage": "week", "code": "200938", "children": []},
  {"id": "100200939", "sid": 130374, "label": "V-200939", "stage": "week", "code": "200939", "children": []},
  {"id": "100200940", "sid": 129981, "label": "V-200940", "stage": "week", "code": "200940", "children": []}],
  <...>
  <...>
```

Sanomasta voi parsia esim. Helsingin ja Uudenmaan sairaanhoitopiirin (code-tunniste 2025/sid-tunniste 12111) sisältämän **Helsingin** (code-tunniste eli kuntakoodi 091/sid-tunniste **128732**). Sanomasta löytyy myös aika-ulottuvuuksien (vuodet/kuukaudet/viikot) tunnistet:

```
{ "id": "time", "label": "time", "children": [
  { "id": "100000", "sid": 12059, "label": "Aika",
  "stage": "root", "code": "0", "properties": { "is": "{}" }, "children": [
  { "id": "101995", "sid": 12307, "label": "1995", "stage": "year", "code": "1995", "children": [
  { "id": "1199501", "sid": 12318, "label": "1995-01", "stage": "month", "code": "199501", "children": [
  { "id": "100199501", "sid": 129350, "label": "V-199501", "stage": "week", "code": "199501", "children": []},
  { "id": "100199502", "sid": 129345, "label": "V-199502", "stage": "week", "code": "199502", "children": []},
  { "id": "100199503", "sid": 129375, "label": "V-199503", "stage": "week", "code": "199503", "children": []},
  { "id": "100199504", "sid": 129376, "label": "V-199504", "stage": "week", "code": "199504", "children": []},
  { "id": "100199505", "sid": 129362, "label": "V-199505", "stage": "week", "code": "199505", "children": []}],
  <...>
  { "id": "102009", "sid": 12241, "label": "2009", "stage": "year", "code": "2009", "children": [
  { "id": "1200901", "sid": 12362, "label": "2009-01", "stage": "month", "code": "200901", "children": [
  { "id": "100200902", "sid": 130327, "label": "V-200902", "stage": "week", "code": "200902", "children": []},
  { "id": "100200903", "sid": 130415, "label": "V-200903", "stage": "week", "code": "200903", "children": []},
  { "id": "100200904", "sid": 129941, "label": "V-200904", "stage": "week", "code": "200904", "children": []},
  { "id": "100200905", "sid": 130211, "label": "V-200905", "stage": "week", "code": "200905", "children": []}],
  <...>
  { "id": "1200909", "sid": 12170, "label": "2009-09", "stage": "month", "code": "200909", "children": [
  { "id": "100200937", "sid": 129436, "label": "V-200937", "stage": "week", "code": "200937", "children": []},
  { "id": "100200938", "sid": 129830, "label": "V-200938", "stage": "week", "code": "200938", "children": []},
  { "id": "100200939", "sid": 130374, "label": "V-200939", "stage": "week", "code": "200939", "children": []},
  { "id": "100200940", "sid": 129981, "label": "V-200940", "stage": "week", "code": "200940", "children": []}],
  <...>
  <...>
```

Sanomasta voi parsia esim. vuoden 2009 syyskuun viikot (sid-tunnisteet 129436, 129830, 130374 ja 129981). Näistä **viikon 39** tunniste on **sid 130374** (label "V-200939"). Parsimalla saadaan tarvittavat esim. Maarianhaminan (**128940**) vuoden 1995 ensimmäisen viikon (**129350**) borreliosi-ilmaantuvuuden hakemiseksi:

https://sampo.thl.fi/pivot/prod/fi/ttr/shp/fact_shp.json?row=area-128940&column=time-129350&filter=reportgroup-12465&filter=measure-73008