Accessible

#FAIR101 #ARDCtraining Webinar 3

PRESENTED BY

Matthias Liffers

Code of Conduct

To ensure that everyone has a fulfilling learning opportunity, FAIR Data 101 is governed by a Code of Conduct.

You can view the Code at tiny.cc/code-conduct

If you observe a breach of the Code of Conduct, please contact us using the form linked in the Code.

Today's agenda

- Accessible
  - A1, A1.1, A1.2
- Machine accessibility
- Protocols and their layers
- Examples of protocols working together

Now we know where it is - how do we get to it?

A1 (meta)data are retrievable by their identifier using a **standardised communications protocol**.

A1.1 the protocol is **open, free, and universally implementable**.

A1.2 the protocol allows for an **authentication and authorisation procedure**, where necessary.

ARDC
Australian Research Data Commons

Why do we care about machine accessibility?

Bureau Home > Australia > Western Australia > Observations > Latest Weather Observations for the Perth Area

Latest Weather Observations for the Perth Area

ⓘ About weather observations | Map of Perth area stations | All WA observations | Latest WA observations | Latest Coastal WA observations

IDW60900

Issued at 9:11 am WST Friday 22 May 2020 (issued every 10 minutes, with the page automatically refreshed every 5 minutes)

Where no observation is available within the last 75 minutes, the latest observation is shown in *italics and coloured* and removed from the table after 30 hours. Station names link to data for the previous 72 hours. These observations have not been quality controlled.

PERTH AREA

	Date/Time WST	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind Dir	Wind Spd km/h	Wind Gust km/h	Wind Spd kts	Wind Gust kts	Press hPa	Rain since 9am mm	Low Temp °C time	High Temp °C time	Highest Wind Gust Dir	Highest Wind Gust km/h time	Highest Wind Gust kts time
Perth	22/09:10am	15.0	12.6	6.8	58	4.0	ENE	9	11	5	6	1023.9	0.0	7.1 07:20am	15.0 09:10am	NE	43 08:43am	23 08:43am
Perth Airport	22/09:10am	14.6	10.8	5.7	55	4.2	ENE	15	17	8	9	1023.8	0.0	6.5 11:32pm	14.6 09:10am	ENE	32 06:35am	17 06:35am
Bickley	22/09:10am	11.7	-	-	-	-	NE	15	20	8	11	-	0.0	7.1 07:02am	11.8 09:10am	E	30 03:20am	16 03:20am
Colpoys Point	22/09:10am	-	-	-	-	-	NE	15	15	8	8	-	-	-	-	ENE	32 06:18am	17 06:18am
Garden Island	22/09:10am	16.2	13.0	8.4	60	3.9	NE	15	20	8	11	1023.8	-	11.7 01:04am	16.2 09:10am	NE	24 08:58am	13 08:58am
Gooseberry Hill	22/09:10am	13.3	7.7	5.4	59	3.7	E	24	30	13	16	-	-	9.4 05:26am	13.3 09:10am	E	50 05:18am	27 05:18am
Hillarys Point	22/09:10am	15.3	-	-	-	-	NE	15	22	8	12	-	-	10.9	15.4	NE	32	17

```html
260 <table id="t1" border="1" cellspacing="0" class="tabledata obs_table" summary="The table for 1 has 19 columns. The first 14 columns are
261 <colgroup>
262
263   <col />
264   <col />
265   <col span="5" />
266   <col span="5" />
267   <col />
268   <col />
269   <col span="6" />
270   </colgroup>
271 <thead>
272   <tr>
273     <th id="t1-datetime" rowspan="2" title="Date and local time">Date/Time<br /><acronym title="Western Standard Time">WST</acronym><
274     <th id="t1-tmp" rowspan="2"><abbr title="Temperature, degrees Celsius">Temp<br />&deg;C</abbr></th>
275     <th id="t1-apptmp" rowspan="2"><abbr title="Apparent Temperature, degrees Celsius">App<br />Temp<br />&deg;C</abbr></th>
276     <th id="t1-dewpoint" rowspan="2"><abbr title="Dew Point Temperature, degrees Celsius">Dew<br />Point<br />&deg;C</abbr></th>
277     <th id="t1-relhum" rowspan="2"><abbr title="Relative Humidity, percentage">Rel<br />Hum<br />%</abbr></th>
278     <th id="t1-delta-t" rowspan="2"><abbr title="Wet Bulb Depression, degrees Celsius">Delta-T<br />&deg;C</abbr></th>
279     <th id="t1-wind" colspan="5">Wind</th>
280     <th id="t1-press-qnh" rowspan="2"><abbr title="Pressure QNH, hectopascals">Press<br />QNH<br />hPa</abbr></th>
281       <th id="t1-press-msl" rowspan="2"><abbr title="Pressure MSL, hectopascals">Press<br />MSL<br />hPa</abbr></th>
282     <th id="t1-rainsince9am" rowspan="2" title="Rain since 9am, millimetres">Rain since<br />9am<br /><abbr title="millimetres">mm</a
283   </tr>
284   <tr>
285     <th headers="t1-wind" id="t1-wind-dir"><abbr title="Direction the wind comes from">Dir</abbr> </th>
286     <th headers="t1-wind" id="t1-wind-spd-kmh"><abbr title="Wind Speed, kilometres per hour, 10-minute average from the standard heig
287     <th headers="t1-wind" id="t1-wind-gust-kmh"><abbr title="Wind Gust, kilometres per hour, measured over 3 seconds from the standar
288     <th headers="t1-wind" id="t1-wind-spd-kts"><abbr title="Wind Speed, knots, 10-minute average from the standard height of 10 metre
289     <th headers="t1-wind" id="t1-wind-gust-kts"><abbr title="Wind Gust, knots, measured over 3 seconds from the standard height of 10
290   </tr>
291 </thead>
292
293 <tbody> <!-- abcd open history tbody after col headings -->
294 <tr class="rowleftcolumn">
295   <td headers="t1-datetime">21/08:30am</td>
296   <td headers="t1-tmp">11.7</td>
297   <td headers="t1-apptmp">10.0</td>
298   <td headers="t1-dewpoint">7.6</td>
299   <td headers="t1-relhum">76</td>
300   <td headers="t1-delta-t">2.0</td>
301   <td headers="t1-wind t1-wind-dir">E</td>
```

```json
{
  "observations": {
    "notice": [
      {
        "copyright": "Copyright Commonwealth of Australia 2020, Bureau of Meteorology. For more information see: http://www.bom.gov.au/other/copyright.shtml http://www.bom.gov.au/other/disclaimer.shtml",
        "copyright_url": "http://www.bom.gov.au/other/copyright.shtml",
        "disclaimer_url": "http://www.bom.gov.au/other/disclaimer.shtml",
        "feedback_url": "http://www.bom.gov.au/other/feedback"
      }
    ],
    "header": [
      {
        "refresh_message": "Issued at  9:01 am WST Thursday 21 May 2020",
        "ID": "IDW60901",
        "main_ID": "IDW60900",
        "name": "Perth",
        "state_time_zone": "WA",
        "time_zone": "WST",
        "product_name": "Capital City Observations",
        "state": "Western Australia"
      }
    ],
    "data": [
      {
        "sort_order": 0,
        "wmo": 94608,
        "name": "Perth",
        "history_product": "IDW60901",
        "local_date_time": "21/09:00am",
        "local_date_time_full": "20200521090000",
        "aifstime_utc": "20200521010000",
        "lat": -31.9,
        "lon": 115.9,
        "apparent_t": 11.6,
        "cloud": "-",
        "cloud_base_m": null,
        "cloud_oktas": null,
        "cloud_type_id": null,
        "cloud_type": "-",
        "delta_t": 2.5,
        "gust_kmh": 11,
        "gust_kt": 6,
        "air_temp": 13.2,
        "dewpt": 8.1,
        "press": 1028.6,
        "press_qnh": 1028.6,
        "press_msl": 1028.6,
```

/ˈpɹəʊtəˌkɒl/

an accepted code of conduct; acceptable behaviour in a given situation or group

Australian Research Data Commons

a set of formal rules describing how to transmit or exchange data, especially across a network

Standard

Open

Free

Universally

ARDC
Australian Research Data Commons

Why?

Trust

Identifying standards with standard identifiers

Australian Research Data Commons

TCP/UDP/IP	10.17487/RFC1122
HTTP	10.17487/RFC2068
IP over Avian Carriers	10.17487/RFC2549
Ethernet	IEEE 802.3
Wifi	IEEE 802.11
MQTT	mqtt-v3.1.1 (well…)
XML	http://www.w3.org/TR/2008/REC-xml-20081126/
JSON	10.17487/RFC8259

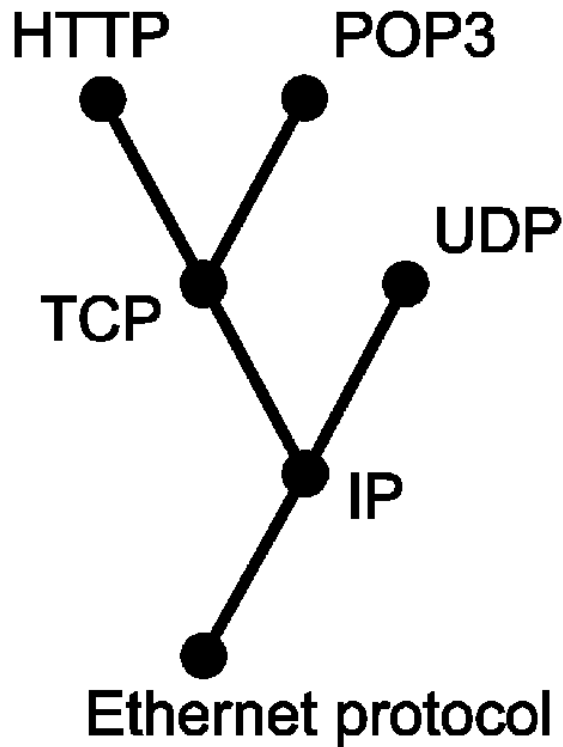# IP over Avian Carriers with Quality of Service

Status of this Memo

This memo defines an Experimental Protocol for the Internet
community. It does not specify an Internet standard of any kind.
Discussion and suggestions for improvement are requested.
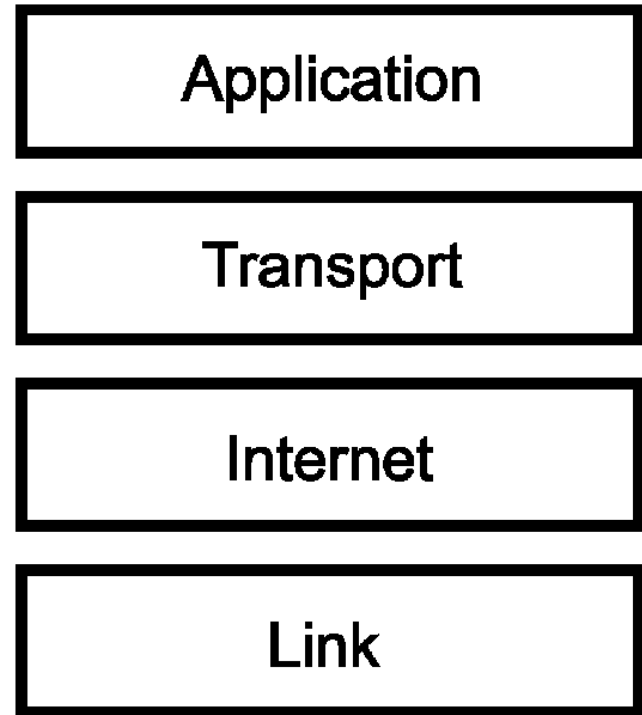Distribution of this memo is unlimited.
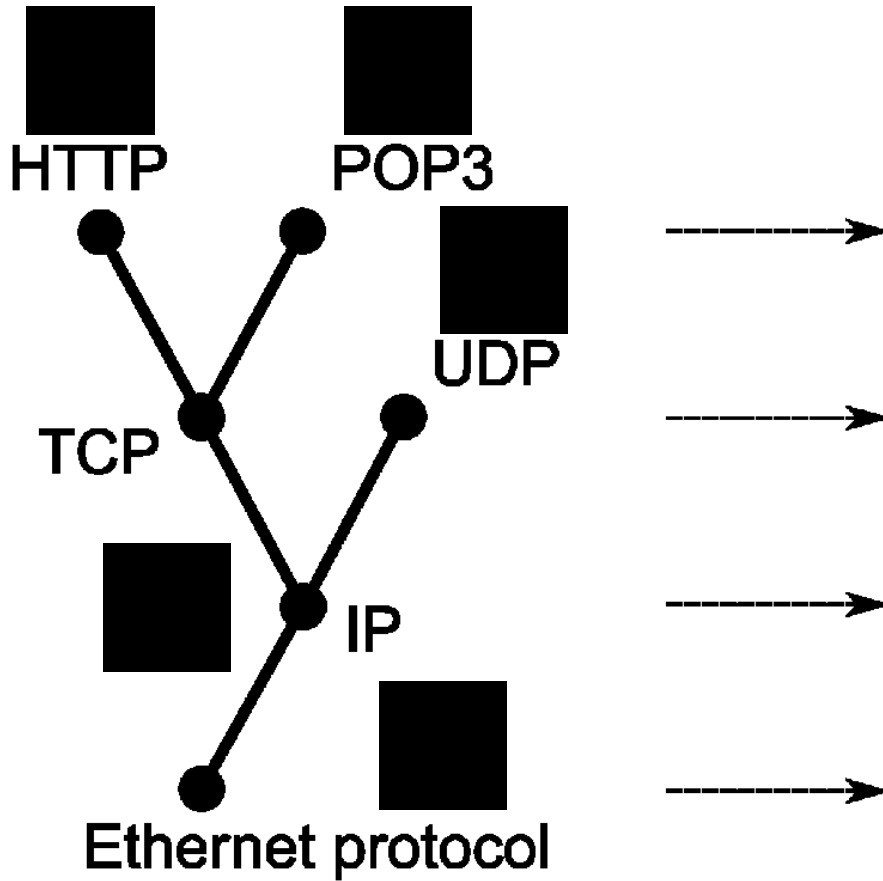
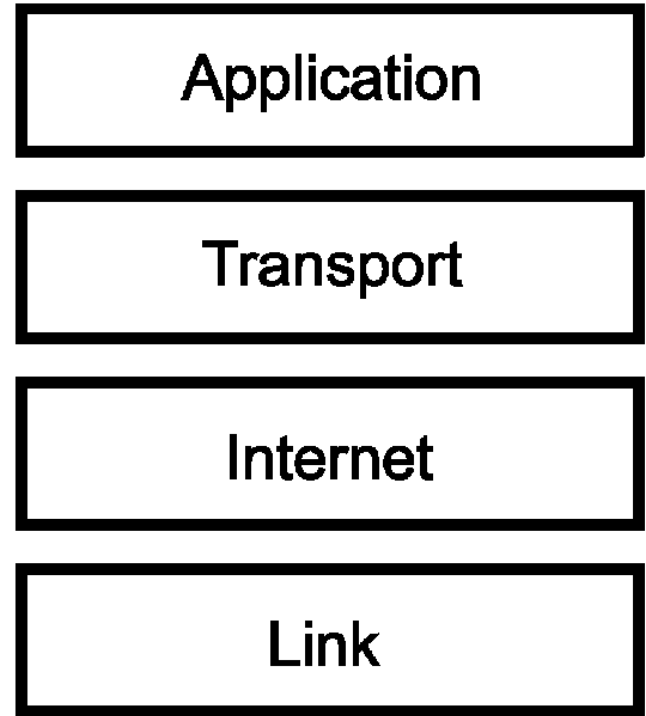Copyright Notice

Protocols are like ogres

HTTP   POP3

TCP

UDP

IP

Ethernet protocol

TCP/IP - model

Application

Transport

Internet

Link

A

HTTP POP3

UDP

TCP

IP

Ethernet protocol

TCP/IP - model

Application

Transport

Internet

Link

A

We only care about the very top layer(s)

(Mostly)

Examples

Two repositories can use <u>OAI-PMH</u> to share <u>Dublin Core</u> metadata as <u>XML</u> over <u>HTTP</u>

https://oai.prosecutionproject.griffith.edu.au/oai?verb=ListRecords&metadataPrefix=oai_dc

https://oai.prosecutionproject.griffith.edu.au/oai?verb=ListRecords&metadataPrefix=oai_dc

https://**oai.prosecutionproject.griffith.edu.au**/oai?verb=ListRecords&metadataPrefix=oai_dc

https://oai.prosecutionproject.griffith.edu.au/oai?verb=ListRecords&metadataPrefix=oai_dc

ARDC

Australian Research Data Commons

https://oai.prosecutionproject.griffith.edu.au/oai?**verb=ListRecords**&metadataPrefix=oai_dc

https://oai.prosecutionproject.griffith.edu.au/oai?verb=ListRecords&**metadataPrefix=oai_dc**

```xml
-<OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/ http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate>2020-05-25T01:22:08Z</responseDate>
  <request verb="ListRecords" metadataPrefix="oai_dc">http://oai.prosecutionproject.griffith.edu.au/oai</request>
  -<ListRecords>
    -<record>
      -<header>
        -<identifier>
          oai:prosecutionproject.griffith.edu.au:VICSC/577875
        </identifier>
        <datestamp>2018-08-21T15:40:06Z</datestamp>
        <setSpec>VICSC</setSpec>
      </header>
      -<metadata>
        -<oai_dc:dc xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/oai_dc/ http://www.openarchives.org/OAI/2.0/oai_dc.xsd">
          -<dc:title>
            Transcription of trial record: THOMAS MATTHEWS, ASSAULT INTENT TO ROB IN COMPANY, MELBOURNE, 1852
          </dc:title>
          <dc:subject>FREE</dc:subject>
          <dc:subject>ASSAULT INTENT TO ROB IN COMPANY</dc:subject>
          <dc:subject>THOMAS MATTHEWS</dc:subject>
          <dc:publisher>Griffith University</dc:publisher>
          <dc:type>Dataset</dc:type>
          -<dc:identifier>
            oai:prosecutionproject.griffith.edu.au:VICSC/577875
          </dc:identifier>
          <dc:language>en</dc:language>
          -<dc:relation>
            https://prosecutionproject.griffith.edu.au/prosecutions/web/index.php?r=public-search/search&trialID=577875
          </dc:relation>
          <dc:relation>http://trove.nla.gov.au/ndp/del/article/4783904</dc:relation>
          <dc:relation>http://purl.org/au-research/grants/arc/FL130100050</dc:relation>
          <dc:coverage>MELBOURNE</dc:coverage>
          <dc:coverage>1852-03-19</dc:coverage>
          -<dc:rights>
            The Prosecution Project publishes data transcribed from historical records held in Australian cultural institutions. Some data is provided as a resource to support private research and study. Researchers wishing to access the database for research
            purposes are invited to contact the Prosecution Project to discuss their project needs.
          </dc:rights>
        </oai_dc:dc>
      </metadata>
    </record>
    -<record>
      -<header>
        -<identifier>
          oai:prosecutionproject.griffith.edu.au:VICSC/577874
        </identifier>
        <datestamp>2018-08-21T15:40:06Z</datestamp>
        <setSpec>VICSC</setSpec>
      </header>
      -<metadata>
        -<oai_dc:dc xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/oai_dc/ http://www.openarchives.org/OAI/2.0/oai_dc.xsd">
          -<dc:title>
            Transcription of trial record: JOHN ALLIOY, ASSAULT INTENT TO ROB IN COMPANY, MELBOURNE, 1852
          </dc:title>
```

A <u>sensor network</u> can transmit <u>MySensors</u> data as <u>JSON</u> over <u>MQTT</u>

Australian Research Data Commons

Infinite diversity in infinite combinations

There is no one repository to rule them all

Infrastructure literacy

Data and metadata do not need to be colocated!

A1.2 the protocol allows for an **authentication and authorisation procedure**, where necessary.

Authorisation and access

Username/password

API key

Infrastructure *and* policy

What's next?

Accessible part 2 with Liz Stokes

- Wednesday 12:00 AWST / 13:30 ACST / 14:00 AEST

Australian Research Data Commons

CONTACT

+61 418 933 678
matthias.liffers@ardc.edu.au
ardc.edu.au