

Cartografia digital e web mapping

Introdução à criação de mapas digitais

<https://github.com/projetoalfobre/cartografia-digital-e-web-mapping>



Nelson A. F. Gonçalves, 2022

1. Introdução à criação de mapas digitais

1.1 Fundamentos sobre informação geográfica e representação cartográfica

1.2 Utilidade e áreas de aplicação

1.3 Open Source, Open Data e Open Access

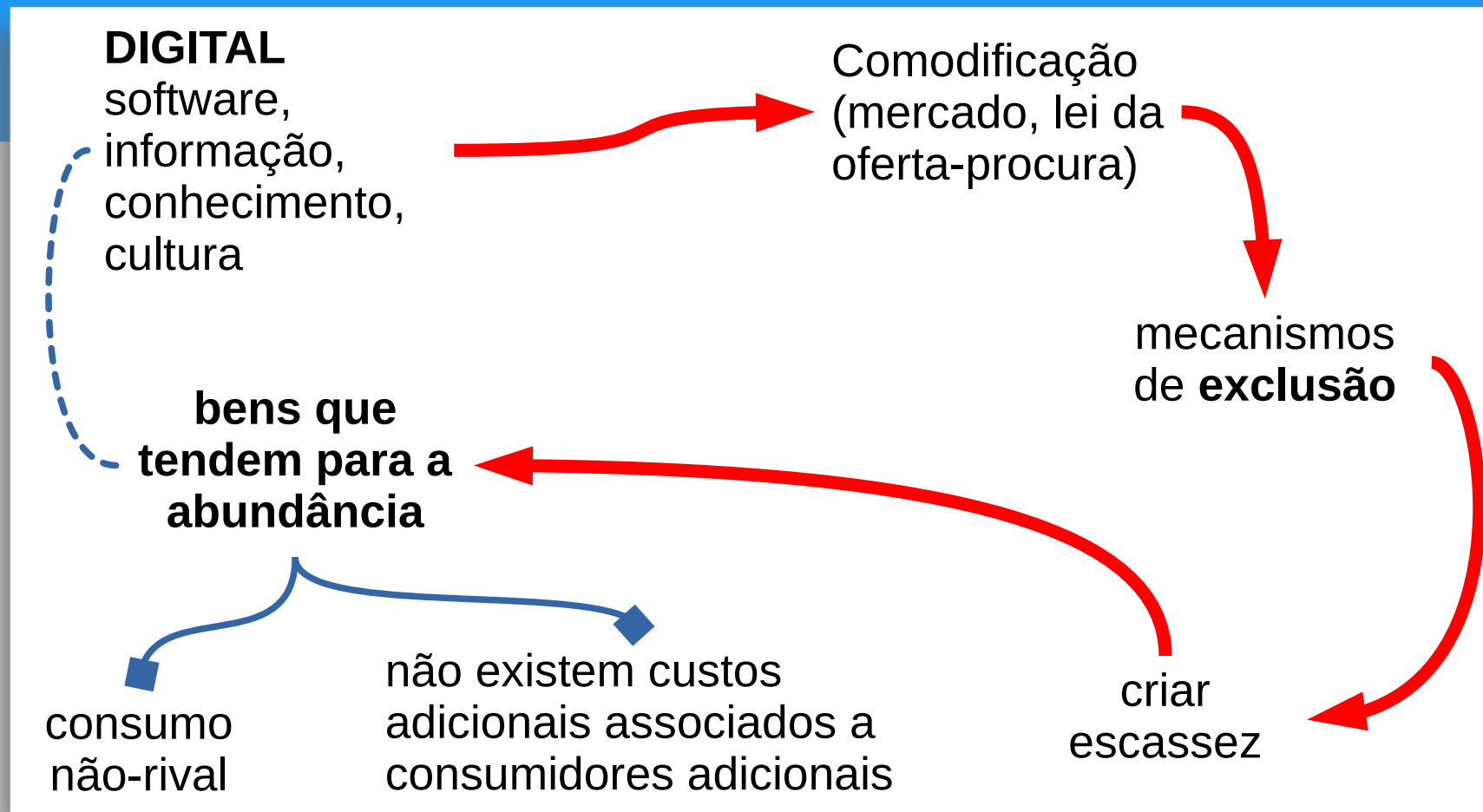
1.4 Equipamentos e Software

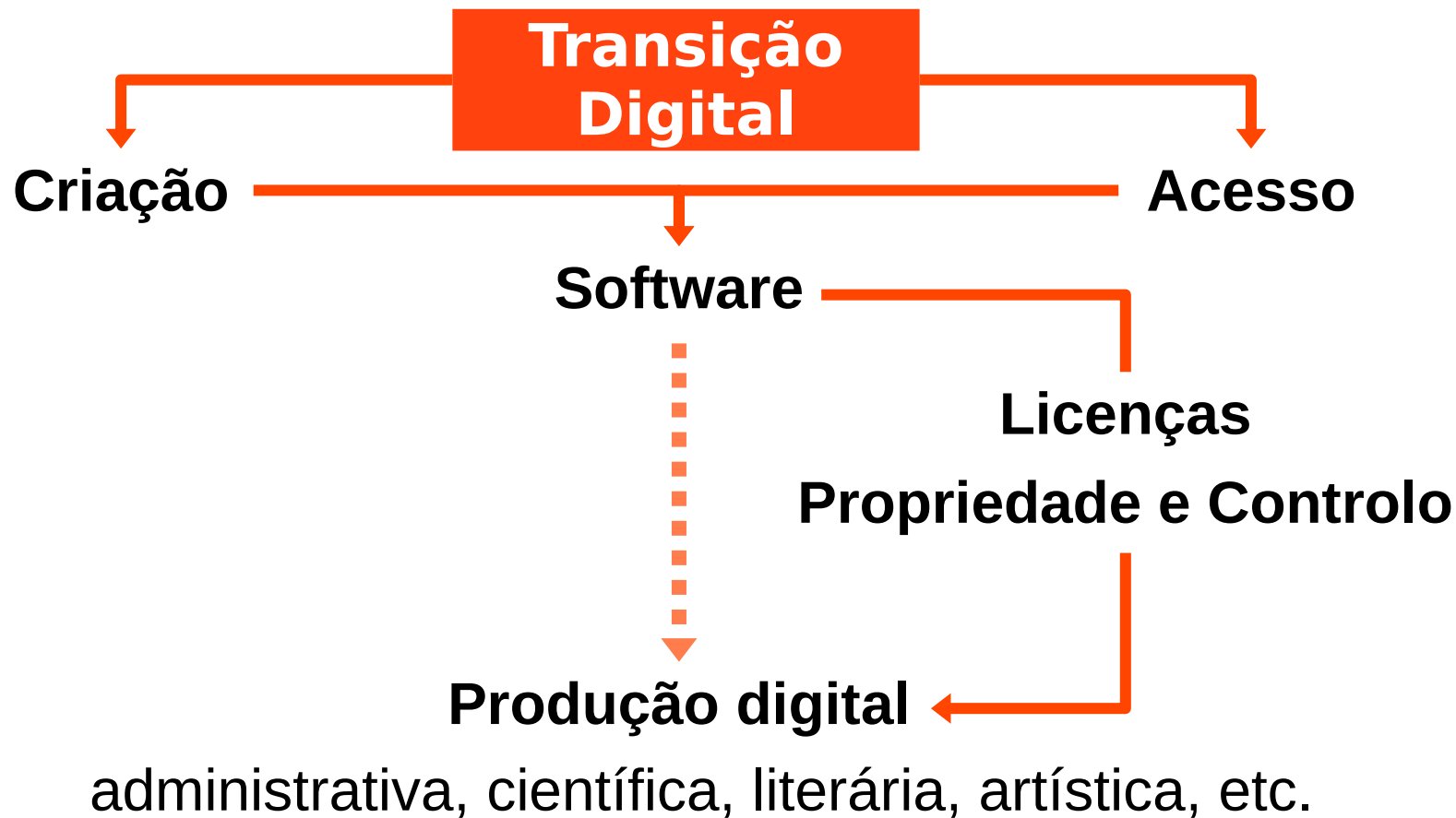
2. uMap

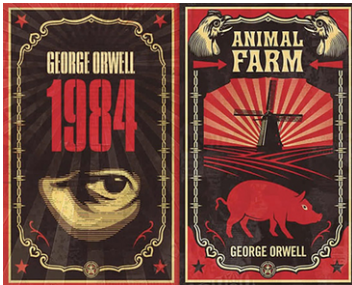
3. QGIS

A utilização de Software Livre e Open Source não é apenas uma questão relacionada com o custo ou natureza das licenças ou a sofisticação do software, inclui a **valorização de abordagens abertas** e do **bem comum**, inclui a **partilha** livre de dados e dos resultados, **transparência** das práticas e metodologias.









trueSpace: descontinuado por razões comerciais

Kindle: software caixa negra

AutoCad/Adobe: monopólio (Maya, 3D Studio, Photoshop, Dreamweaver, AfterEffect, InDesign, ...)

Obsolescência programada
EULA

2.1.4 Effect of Unauthorized Use. Licensee will not engage in, and will not permit or assist any third party to engage in any of the uses or activities pro Section 2.1 (Limitations and Exclusions) (collectively, "Unauthorized Uses"). Any such Unauthorized Use, and any Installation of or Access to the License license grants (including, without limitation, outside the applicable License Type and/or Permitted Number) or otherwise not in accordance with this Agree well as a breach of this Agreement. Licensee will notify Autodesk promptly of any such Unauthorized Uses or other unauthorized Installation or Access

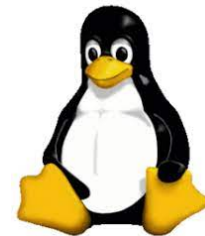
- Garantir maior longevidade do dados
- Reduzir custo das licenças e upgrades
- Aumentar a interoperabilidade
- Eliminar Lock-in proprietário
- Adaptação e customização
- Inovação e sofisticação



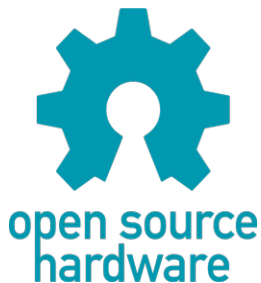
"Free software is a matter of liberty, not price. To understand the concept, you should think of free as in free speech, not as in free beer."

Richard Stallman

- **Liberdade 0** Executar o software para qualquer fim.
- **Liberdade 1** Estudar o seu funcionamento e *alterá-lo*.
- **Liberdade 2** Redistribuir cópias para que possa ajudar o próximo.
- **Liberdade 3** Modificar o programa e *distribuir estas modificações*, para benefício de toda a comunidade.



Movimentos sociais que apoiam o desenvolvimento de culturas baseadas ou que suportam formas não proprietárias de produção e partilha de conhecimento.



Acesso Aberto (open access) designa um movimento que fomenta e suporta a distribuição e partilha de recursos sob licenças permissivas.

<https://www.rcaap.pt/>

<https://www.acessolivre.pt/>

Dados Abertos (open data) defende a ideia de que certos dados devem poder ser livremente utilizados, reutilizados e redistribuídos para qualquer fim.

<https://dados.gov.pt/pt/>

<http://centraldedados.pt/>



OpenStreetMap

<https://www.openstreetmap.org/>

Printmaps

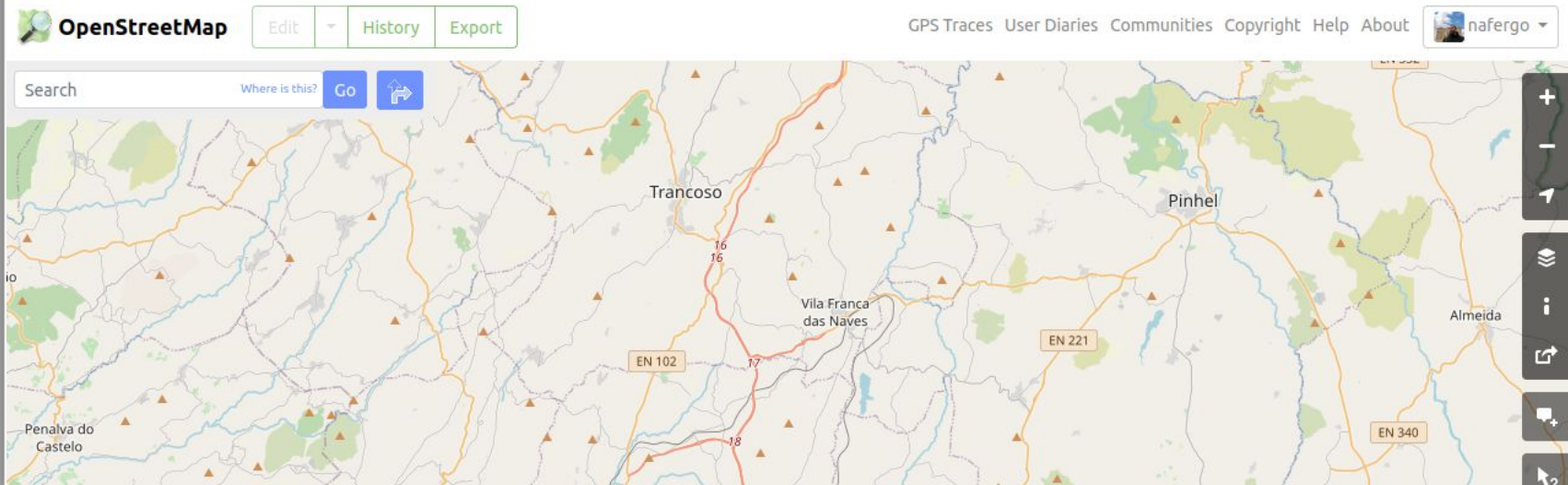
<http://printmaps-osm.de/en/index.html>

Field Papers

<http://fieldpapers.org/>

OSM-Boundaries

<https://osm-boundaries.com/>



Overpass turbo

<https://overpass-turbo.eu/>

The screenshot displays the Overpass Turbo web interface. At the top, there is a navigation bar with buttons: Run, Share, Export, Wizard, Save, Load, Settings, and Help. The 'Wizard' button is highlighted with a red box, and a red arrow points from it to a 'Query Wizard' dialog box. The dialog box contains a text input field with the text 'statue OR bust OR memorial'. Below the input field, it says 'The wizard assists you with creating Overpass queries. Here are some usage examples:'. A list of examples follows: 'Drinking Water', 'highway=* and type:way', and 'tourism=museum in Vienna'. At the bottom of the dialog box, there are three buttons: 'build query', 'build and run query', and 'cancel'. The background shows a map of a city with various landmarks and streets. A pop-up window for 'Node 7140943298' is visible, showing tags like 'amenity=fountain' and coordinates '40.6594345 / -7.9155575 (lat/lon)'. At the bottom of the map, there is a status bar showing 'Loaded - Nodes: 12, ways: 0, relations: 0' and 'Displayed - pois: 12, lines: 0, polygons: 0'.

```
1  /*  
2  This is an example Overpass query.  
3  Try it out by pressing the Run button above!  
4  You can find more examples with the Load tool.  
5  */  
6  
7  node  
8  [amenity=fountain]  
9  {{{bbox}}};  
10 out;
```

https://wiki.openstreetmap.org/wiki/Category:Tag_descriptions_by_group

geojson.io

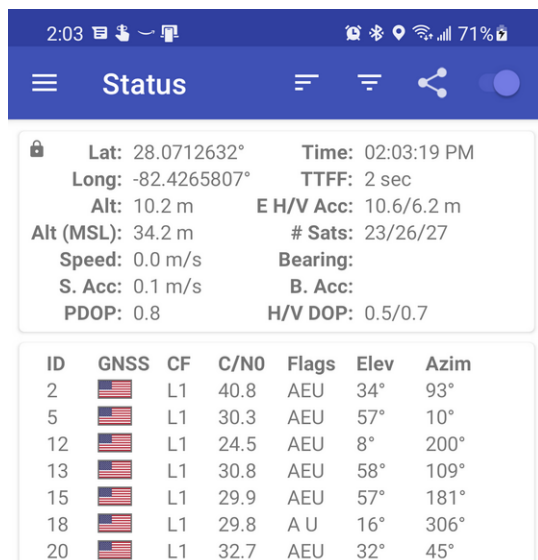
GPSTest

OSMTracker

<https://geojson.io/>

<https://github.com/barbeau/gptest>

<https://github.com/labexp/osmtracker-android>

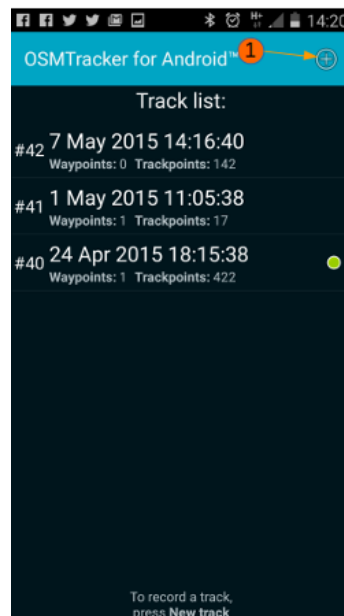


2:03 71%

Status

Lat: 28.0712632° Time: 02:03:19 PM
Long: -82.4265807° TTFF: 2 sec
Alt: 10.2 m E H/V Acc: 10.6/6.2 m
Alt (MSL): 34.2 m # Sats: 23/26/27
Speed: 0.0 m/s Bearing:
S. Acc: 0.1 m/s B. Acc:
PDOP: 0.8 H/V DOP: 0.5/0.7

ID	GNSS	CF	C/N0	Flags	Elev	Azim
2	🇺🇸	L1	40.8	AEU	34°	93°
5	🇺🇸	L1	30.3	AEU	57°	10°
12	🇺🇸	L1	24.5	AEU	8°	200°
13	🇺🇸	L1	30.8	AEU	58°	109°
15	🇺🇸	L1	29.9	AEU	57°	181°
18	🇺🇸	L1	29.8	A U	16°	306°
20	🇺🇸	L1	32.7	AEU	32°	45°

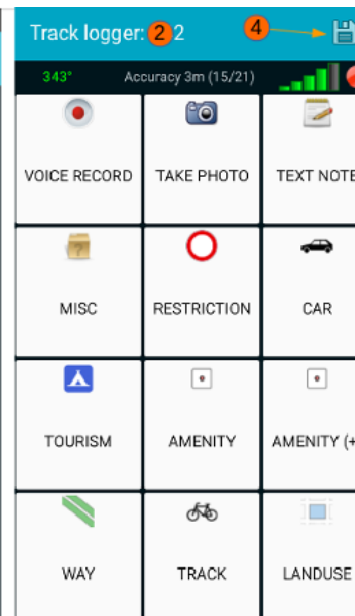


OSMTracker for Android

Track list:

#42	7 May 2015 14:16:40	Waypoints: 0 Trackpoints: 142
#41	1 May 2015 11:05:38	Waypoints: 1 Trackpoints: 17
#40	24 Apr 2015 18:15:38	Waypoints: 1 Trackpoints: 422

To record a track, press **New track**



Track logger: 2 2 4

343° Accuracy 3m (15/21)

VOICE RECORD	TAKE PHOTO	TEXT NOTE
MISC	RESTRICTION	CAR
TOURISM	AMENITY	AMENITY (+)
WAY	TRACK	LANDUSE