OPEN SOURCE AI DEFINITION

Online public townhall

March 8, 2024

last updated: March 5, 2024 (MJ)

Community agreements

- **One Mic, One Speaker** -- Please allow one person to speak at a time.
- **Take Space, Make Space** -- If you tend to talk more, we invite you to make space for others to share. If you tend not to share, we invite you to speak up.
- **Kindness** -- This work is hard, but we don't have to be. Gentleness and curiosity help. Those who use insults or hate speech will need to leave the meeting.
- **Forward Motion** -- We advance by focusing on what is possible in the moment and doing it. Obstacles are marked for later discussion, not used to stop the process. If we hit a boulder, we note it on the map and keep walking. We'll come back and unearth it later on.
- **Solution-Seeking** -- This work is so complex that focusing on what won't work will stop it. Suggesting new ideas, options, and proposals is vulnerable, but crucial. All of us are needed to make this work.
- **Anything else?**

The objective for 2024

Open Source AI Definition version 1.0

hackmd.io/@opensourceinitiative/osaid-0-0-5

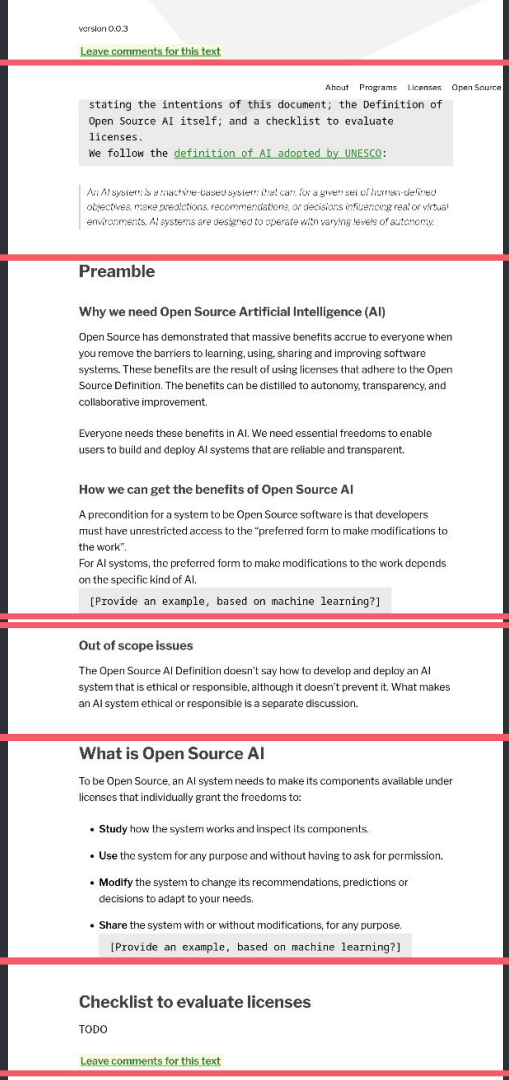
Definition of AI system

Preamble

Out of scope issues

4 freedoms

Legal checklist



version 0.0.3

Leave comments for this text

About Programs Licenses Open Source

stating the intentions of this document; the Definition of Open Source AI itself; and a checklist to evaluate licenses.
We follow the definition of AI adopted by UNESCO:

> *An AI system is a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. AI systems are designed to operate with varying levels of autonomy.*

Preamble

Why we need Open Source Artificial Intelligence (AI)

Open Source has demonstrated that massive benefits accrue to everyone when you remove the barriers to learning, using, sharing and improving software systems. These benefits are the result of using licenses that adhere to the Open Source Definition. The benefits can be distilled to autonomy, transparency, and collaborative improvement.

Everyone needs these benefits in AI. We need essential freedoms to enable users to build and deploy AI systems that are reliable and transparent.

How we can get the benefits of Open Source AI

A precondition for a system to be Open Source software is that developers must have unrestricted access to the "preferred form to make modifications to the work".
For AI systems, the preferred form to make modifications to the work depends on the specific kind of AI.

[Provide an example, based on machine learning?]

Out of scope issues

The Open Source AI Definition doesn't say how to develop and deploy an AI system that is ethical or responsible, although it doesn't prevent it. What makes an AI system ethical or responsible is a separate discussion.

What is Open Source AI

To be Open Source, an AI system needs to make its components available under licenses that individually grant the freedoms to:

- **Study** how the system works and inspect its components.
- **Use** the system for any purpose and without having to ask for permission.
- **Modify** the system to change its recommendations, predictions or decisions to adapt to your needs.
- **Share** the system with or without modifications, for any purpose.

[Provide an example, based on machine learning?]

Checklist to evaluate licenses

TODO

Leave comments for this text

What is Open Source AI

To be Open Source, an AI system needs to be available under legal terms that grant the freedoms to:

- **Use** the system for any purpose and without having to ask for permission.
- **Study** how the system works and inspect its components.
- **Modify** the system to change its recommendations, predictions or decisions to adapt to your needs.
- **Share** the system with or without modifications, for any purpose.

Working group recommendations

Systems review plan

Planned phases and where we are now:

1. ✔ Analyze a sample of “AI systems” to identify precisely the required components for study, use modification, and sharing of the entire system
2. For each component of these systems, check their availability and the conditions for use/distribution (the legal documents)
3. Generalize the findings and complete a checklist for OSI license committee to evaluate legal documents for AI systems (OSAID “feature complete”)
4. Get endorsements from major stakeholders (RC1)
5. Keep refining the OSAID, as it gains support from more stakeholders (v. 1.0)

Systems

Selected to have diversity of approaches:

1. **Pythia**: open science project, with a permissive license
2. **BLOOM**: open science project, with lots of details released but shared with a restrictive license
3. **Llama 2**: commercial project, accompanied by limited amount of science and with a restrictive license
4. **OpenCV**: open source project, with ML components outside of the generative AI space

Members

Llama 2

1. **Bastien Guerry** DINUM, French public administration
2. **Ezequiel Lanza** Intel
3. **Roman Shaposhnik** Apache Software Foundation
4. **Davide Testuggine** Meta
5. **Jonathan Torres** Meta
6. **Stefano Zacchiroli** Polytechnic Institute of Paris

BLOOM

1. **George C. G. Barbosa** Fundação Oswaldo Cruz
2. **Daniel Brumund** GIZ FAIR Forward - AI for all
3. **Danish Contractor** BLOOM Model Gov. WG
4. **Abdoulaye Diack** Google
5. **Deshni Govender** GIZ FAIR Forward - AI for all
6. **Jaan Li** University of Tartu, Phare Health
7. **Jean-Pierre Lorre** LINAGORA, OpenLLM-France
8. **Ofentse Phuti** WiMLDS Gaborone
9. **Caleb Fianku Quao** Kwame Nkrumah University of Science and Technology, Kumasi

Pythia

1. **Seo-Young Isabelle Hwang** Samsung
2. **Cailean Osborne** University of Oxford, Linux Foundation
3. **Stella Biderman** EleutherAI
4. **Justin Colannino** Microsoft
5. **Aviya Skowron** EleutherAI

OpenCV

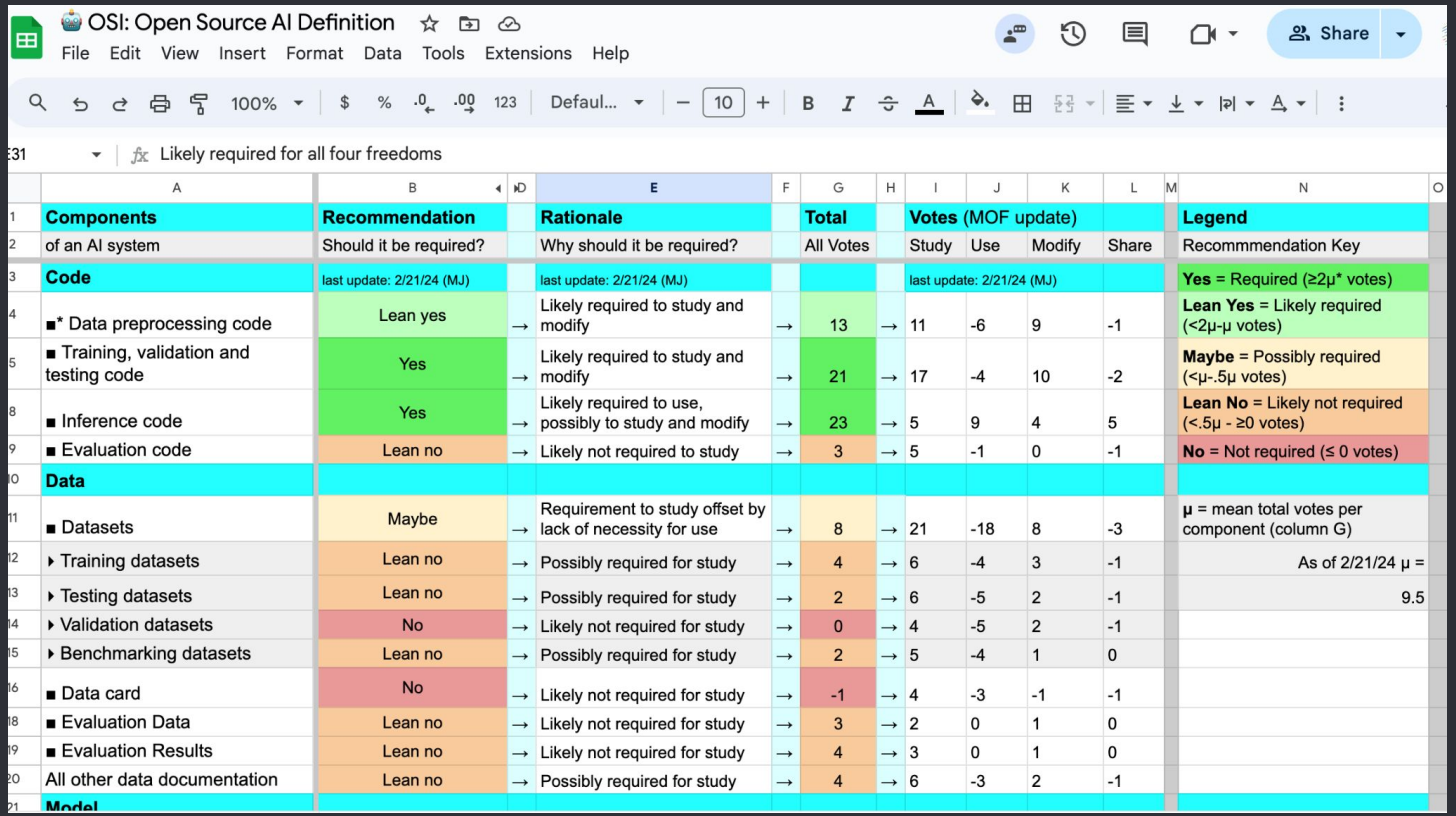
1. **Rahmat Akintola** Cubeseed Africa
2. **Ignatius Ezeani** Lancaster University
3. **Kevin Harerimana** CMU Africa
4. **Satya Mallick** OpenCV
5. **David Manset** ITU
6. **Phil Nelson** OpenCV
7. **Tlamelo Makati** WiMLDS Gaborone, Technological University Dublin
8. **Minyechil Alehegn Tefera** Mizan Tepi University
9. **Akosua Twumasi** Ghana Health Service

Voting

Code All code used to parse and process data, including:	Required to Use?	Required to Study?	Required to Modify?	Required to Share?
Data preprocessing code		SZ	SZ EL	
Training code		SZ	SZ	
Test code				
Code used to perform inference for benchmark tests				
Validation code			SZ	
Inference code	SM EL DT SM JT SZ		SZ	SZ
Evaluation code				
Other libraries or code artifacts that are part of the system, such as tokenizers and hyperparameter search code, if used.	BG,EL, SM, SZ	SZ	SZ	SZ

source: Llama 2 working group (Feb. 9, 2024)

Vote compilation



OSI: Open Source AI Definition

File Edit View Insert Format Data Tools Extensions Help

Share

E31 — fx Likely required for all four freedoms

	A	B	D	E	F	G	H	I	J	K	L	M	N	O
1	**Components**	**Recommendation**		**Rationale**		**Total**		**Votes** (MOF update)					**Legend**	
2	of an AI system	Should it be required?		Why should it be required?		All Votes		Study	Use	Modify	Share		Recommmendation Key	
3	**Code**	last update: 2/21/24 (MJ)		last update: 2/21/24 (MJ)				last update: 2/21/24 (MJ)					**Yes** = Required (≥2μ* votes)	
4	■* Data preprocessing code	Lean yes	→	Likely required to study and modify	→	13	→	11	-6	9	-1		**Lean Yes** = Likely required (<2μ-μ votes)	
5	■ Training, validation and testing code	Yes	→	Likely required to study and modify	→	21	→	17	-4	10	-2		**Maybe** = Possibly required (<μ-.5μ votes)	
8	■ Inference code	Yes	→	Likely required to use, possibly to study and modify	→	23	→	5	9	4	5		**Lean No** = Likely not required (<.5μ - ≥0 votes)	
9	■ Evaluation code	Lean no	→	Likely not required to study	→	3	→	5	-1	0	-1		**No** = Not required (≤ 0 votes)	
10	**Data**													
11	■ Datasets	Maybe	→	Requirement to study offset by lack of necessity for use	→	8	→	21	-18	8	-3		**μ** = mean total votes per component (column G)	
12	▸ Training datasets	Lean no	→	Possibly required for study	→	4	→	6	-4	3	-1		As of 2/21/24 μ =	
13	▸ Testing datasets	Lean no	→	Possibly required for study	→	2	→	6	-5	2	-1		9.5	
14	▸ Validation datasets	No	→	Likely not required for study	→	0	→	4	-5	2	-1			
15	▸ Benchmarking datasets	Lean no	→	Possibly required for study	→	2	→	5	-4	1	0			
16	■ Data card	No	→	Likely not required for study	→	-1	→	4	-3	-1	-1			
18	■ Evaluation Data	Lean no	→	Likely not required for study	→	3	→	2	0	1	0			
19	■ Evaluation Results	Lean no	→	Likely not required for study	→	4	→	3	0	1	0			
20	All other data documentation	Lean no	→	Possibly required for study	→	4	→	6	-3	2	-1			
21	**Model**													

As of 2/21/24 at 9:00 pm UTC

Recommendations summary 2/26/24

- **Required**
  - Training, validation & testing code
  - Inference code
  - Model architecture
  - Model parameters
  - Supporting libraries & tools
- **Likely Required**
  - Data preprocessing code
- **Maybe Required**
  - Datasets
  - Usage documentation
  - Research paper
- **Likely Not Required**
  - Model card
  - Evaluation code
- **Not Required**
  - Data card
  - Evaluation data
  - Evaluation results
  - Model metadata
  - Sample model outputs
  - Technical report

go to results spreadsheet →

Definition v. 0.0.6 3/7/24

- **Required components**
  - Data preprocessing code
  - Training, validation & testing code
  - Inference code
  - Model architecture
  - Model parameters
  - Supporting libraries & tools
- **Optional** (appreciated, not required)
  - Datasets
  - Usage documentation
  - Research paper
  - Model card
  - Evaluation code
  - Data card
  - Evaluation data
  - Evaluation results
  - Model metadata
  - Sample model outputs
  - Technical report

Required Components Detail 3/7/24

- A sufficiently detailed information on **how the system was trained**, including the training methodologies and techniques, the training data sets used, information about the provenance of those data sets, their scope and characteristics; how the data was obtained and selected, the labeling procedures and data cleaning methodologies.
- The **code** used for pre-processing data, the code used for training, validation and testing.
- The **model** parameters, including weights. Where applicable, these should include checkpoints from key intermediate stages of training as well as the final optimizer state.
- The **supporting libraries** like tokenizers and hyperparameters search code (if used), the inference code, and model architecture.

Generalized text in v. 0.0.6

- Precondition to exercise these freedoms is to have access to **the preferred form to make modifications** to the system.

Release date: Mar 11, 2024

Next steps

- Version 0.0.6 release on Monday
- Start step 2: For each system, check the availability of **required components** and analyze their conditions for use/distribution (the legal documents)

What phase 2 will look like

For each AI system, build a table like:

Required component	Link to resource	Legal framework
Data pre-processing code	URL	OSI-approved license
Training, validation and testing code	URL	…
Inference code	URL	…
Supporting libraries and tools	URL	…
Model architecture	URL	…
Model parameters	URL	???

2024 timeline

Track 1: System testing work stream

Track 2: Stakeholder consultation work stream

Track 3: Releases

February	March	April	May	June …	… October
Call For Volunteers + Activity Feedback and Revision	**Virtual System Review Meetings Begin**	**Virtual System Review Meetings Continue**	**Virtual System Review Meetings END**	**Feedback Informs Content of OSI In-Person Stakeholder Meeting**	**Monthly Virtual Meetings**
Bi-Weekly Virtual Public Townhalls	Bi-Weekly Virtual Public Townhalls	Bi-Weekly Virtual Public Townhalls	Bi-Weekly Virtual Public Townhalls	Townhall + **OSI In-Person Stakeholder Meeting** (date + place TBD)	**Release version 1.0**
Draft 0.0.5	Draft 0.0.6	Draft 0.0.7	Draft 0.0.8	RC1	v. 1.0

Criteria for RC1 and v. 1.0

RC1

- Expected outcome of in-person meeting end May/early June!
- The draft is completed in all its parts
- The draft is supported by at least 2 representatives for each of the 6 stakeholder groups

version 1

- Expected outcome of in-person and online meetings through the summer/early autumn
- The draft is endorsed by at least 5 reps for each of the stakeholder groups
- Announced in late October

Help us find stakeholders

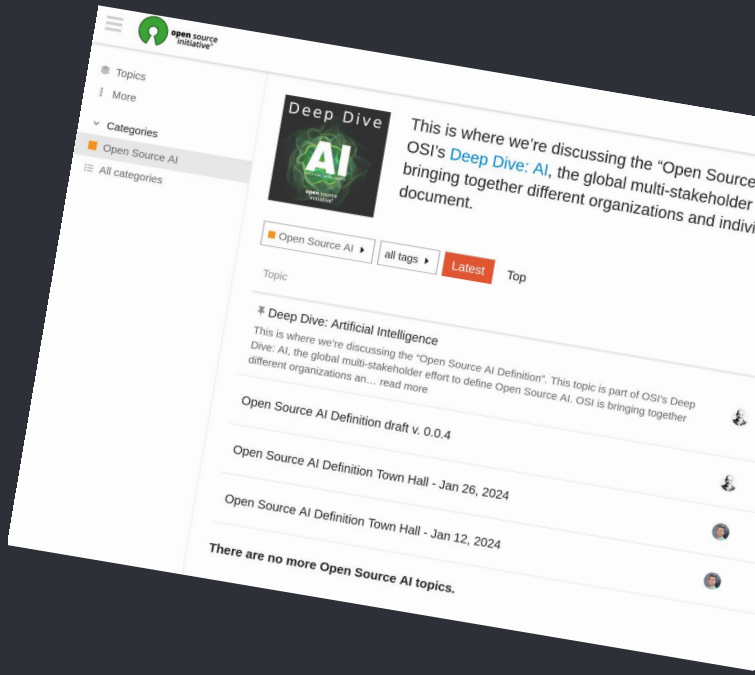
System Creator	License Creator	Regulator	Licensee	End User	Subject
Makes AI system and/or component that will be studied, used, modified, or shared through an open source license (e.g., ML researcher in academia or industry)	Writes or edits the open source license to be applied to the AI system or component; includes compliance (e.g., IP lawyer)	Writes or edits rules governing licenses and systems (e.g. government policy-maker)	Seeks to study, use modify, or share an open source AI system (e.g. AI engineer, health researcher, education researcher)	Consumes a system output, but does not seek to study, use, modify, or share the system (e.g., student using a chatbot to write a report, artist creating an image)	Affected upstream or downstream by a system output without interacting with it intentionally; includes advocates for this group (e.g. people with loan denied, or content creators)
✅	✅	⚠️	✅	⚠️	⚠️
Enough to start	Enough to start	Leads to US, EU, Singapore, no commitment yet	Enough to start	Which org is squarely in this space?	ACLU, Algorithmic Justice League

It doesn’t end with v. 1.0

We’ll need to define rules for maintenance and review of the Definition

Join the conversation

- discuss.opensource.org
- Public forum
- Join as OSI member
  - Free or full
  - SSO with other OSI websites



Q & A

Thank you

We realize this is difficult work and we appreciate your help and openness in improving the definitional process.