# How to use open source to insure impact

# Context
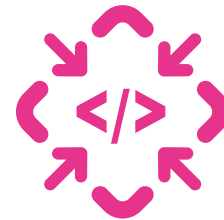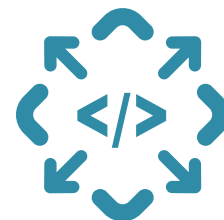
As part of your research, you create software based on existing code/libraries. Your software will ideally be used by companies via the TRAIL Factory. To ensure the best possible use of your work and depending on the goal you are seeking, attention must be paid to the choice of licenses:

▷ You will **reuse** from **existing code**

▷ You will use to **distribute your code**

# Types of open sources licenses

**TR▲IL**

**LiEU**
LIAISON ENTREPRISES-UNIVERSITÉS    Wallonie

A lot of code is available as Open Source. There are **2 types** of open source licenses, permissive and copyleft, with imply very different consequences on what you can do with your software.

If you reuse code under:

▷ A **permissive** license (MIT, BSD, Apache...): you essentially have to mention the author, as for publications.

▷ A **copyleft** license (AGPL, GPL...): you have to give access to the source code of the whole software. This is of course an obstacle to a commercial distribution.

# Choosing of a distribution method

## Proprietary license (commercial)

**+**
Economic return (or assessment of the potential economic return)

Competitive advantage (secret)

Reassures companies ( for collaborations)

Reassures investors, simple business model (for spin-offs)

**–**
Not compatible with Open Science

Fewer possibilities of dissemination

## Open Source license

**+**
Compatible with Open Science

Possibility to get help from other contributors

Facilitates the mobility of researchers between universities

Possibility of testing for users

Contribution to the common good

**–**
No financial return on license

Risk that the lead on the project escapes the main author

For large projects, need to manage the user/developer community

**In the framework of Ariac, distribution under an open source license is encouraged**

# Choosing a distribution channel: the 2 types of Open Source

**TRAIL**

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## Permissive OS license (MIT, BSD, Apache...)

## Copyleft OS license (AGPL, GPL...)

**+** Greater freedom of dissemination and reuse

Larger community of contributors, more potential users

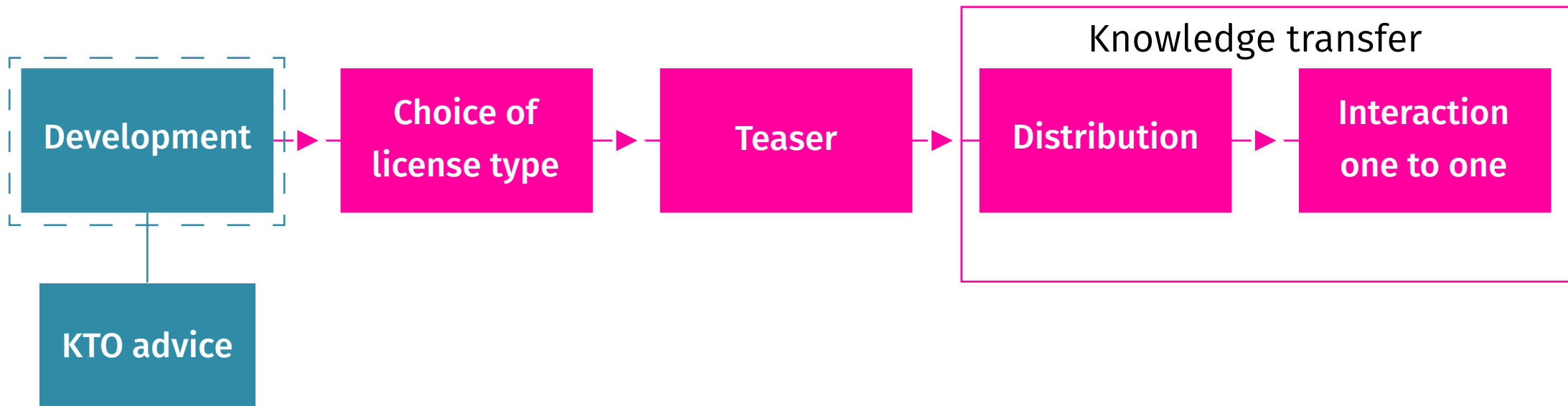**−** Code can be commercialized without permission or acknowledgement to the author

**Recommended license:** Apache 2
This permissive license contains a patent protection clause.

**+** Allows one to follow the evolutions and fork of the code

Prevents code reuse in commercial software

**−** There are many incompatibilities with other open source licenses
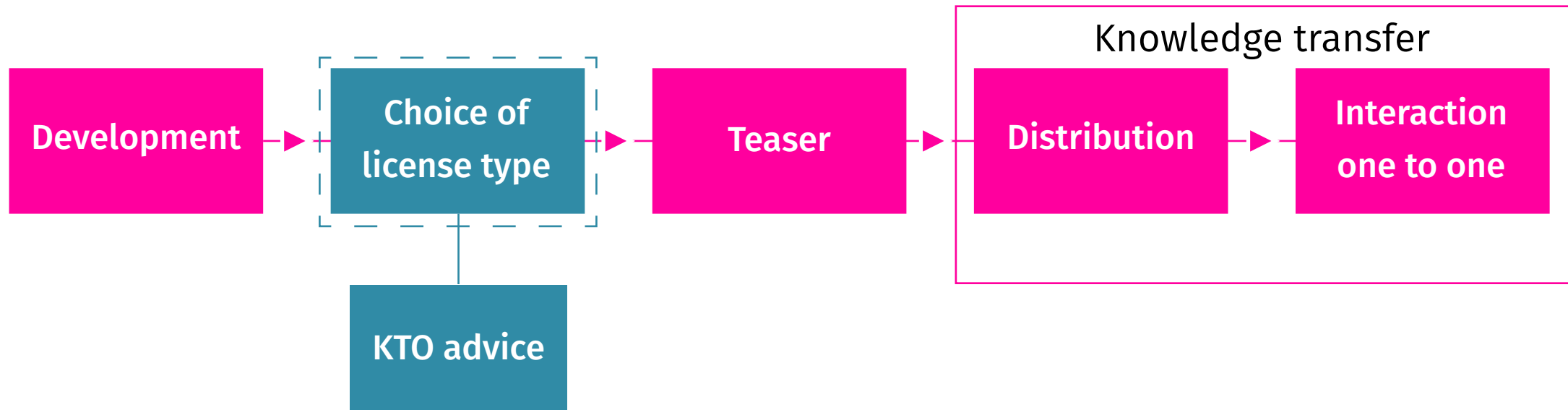
**Recommended license:** AGPL v3

The strictest copyleft license: obliges to make the code available when distributing the software, but also when making it accessible via a cloud service, which is very relevant in the context of AI.

# Timeline

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Wallonie

**Development** → **Choice of license type** → **Teaser** → [ Knowledge transfer: **Distribution** → **Interaction one to one** ]

**KTO advice**

▷ During development, we recommend that you only use code under a permissive license

▷ During this phase of development, do not release publicly on GitHub or other

▷ If you plan to integrate code under copyleft license (GPL…), if you have questions… ➡ **Call on your KTO scientific advisor**

# Timeline

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Development → Choice of license type → Teaser → [ Knowledge transfer: Distribution → Interaction one to one ]
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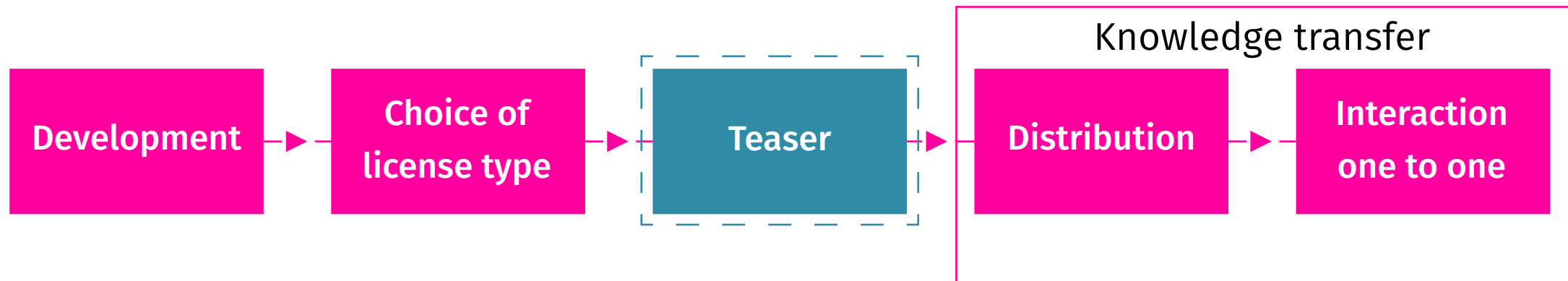
Choice of license type — KTO advice

Knowledge transfer

▷ When the interest of a diffusion is felt, whether it is in the form of a publication, an open source distribution, or a commercialization, it is then time to decide on the choice of the license.

▷ Contact the scientific advisor from your KTO (ASAP, ideally not less than 3 months before the distribution). During this meeting, the appropriate distribution mode (commercial, permissive open source or copyleft) will be discussed, based on the criteria mentioned in the previous slides.
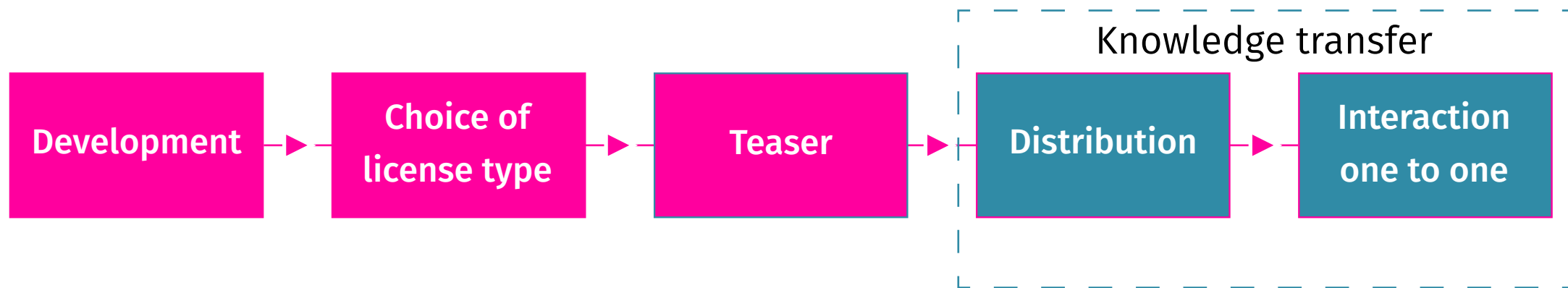
# Timeline

Knowledge transfer

Development → Choice of license type → Teaser → Distribution → Interaction one to one

▷ 3 months before the planning of the diffusion, a 'teaser' of the result of the research will be communicated to Walloon companies

# Timeline

Knowledge transfer

| Development | → | Choice of license type | → | Teaser | → | Distribution | → | Interaction one to one |

▷ It is time to distribute your code on GitHub or other

▷ You will have to fill the needed information on the TRAIL Factory

▷ You may be in contact with companies as part of the transfer of your results. For this you will be assisted by your KTO.

Quick guide to most common
Open Source licenses

# MIT license

▷ Permissive license

▷ Source code distribution: keep/adapt the copyright notice, keep the license

▷ Binary form distribution: mention 'somewhere' the copyright notice and license conditions

▷ Trigger: distributing the software

[More info on MIT license](#)

# BSD-3 license

▷ Permissive license

▷ Source code distribution: keep/adapt the copyright notice, keep the license

▷ Binary form distribution: mention the copyright notice and license conditions in the software documentation

▷ Do not use the names of copyright holders (or authors) to promote your software

▷ Trigger: distributing the software

More info on BSD-3 license

# Apache v2 : copyright & license

▷ Permissive license

▷ Notify any modified files

▷ Source code distribution: keep/adapt the copyright notice (NOTICE file), keep the LICENSE file

▷ Binary form distribution:
   provide a copy of the license
   provide the NOTICE (copyrights) information in NOTICE file, or inside documentation, or via the software user interface

▷ Do not use project trademarks

▷ **Warning: Anti-patent treachery clause!**
   If you have a patent on a feature you contribute to the software, you cannot then use this patent to prevent anybody from using the software freely

▷ Trigger: distributing the software

More info on Apache v2

# GPL v3 license

▷ Copyleft license

▷ Distribution:

  Publish a copyright notice, and a notice that the software is licensed under GPL

  Give access to the source code of the whole software

▷ Do not use project trademarks

▷ **Warning: Anti-patent treachery clause!**

  If you have a patent on a feature you contribute to the software, you cannot then use this patent to prevent anybody from using the software freely

▷ Trigger: distributing the software

[More info on GPL v3 license](#)

# GPL v2 license

▷ Copyleft license

▷ Quite similar to the GPL v3 license, but incompatible with *a lot* of other open source licenses (including the very common Apache, and GPL v3 licenses!)

▷ **We strongly encourage you to take contact with your KTO if you have to use a library under GPL v2**

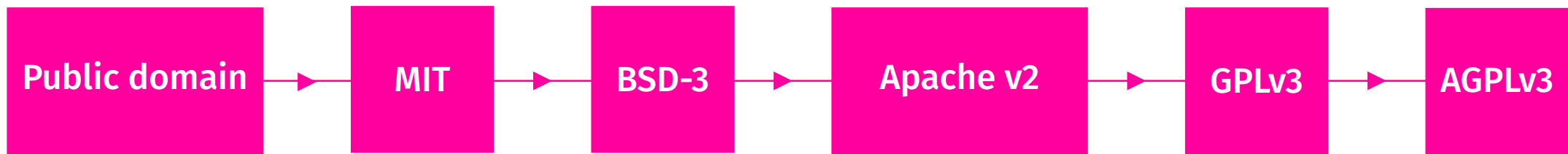▷ Trigger: distributing the software

More info on GPL v2 license

# AGPL v3 license

▷ Copyleft license

▷ Same as GPL v3, except the trigger

▷ Trigger: distributing the software, **and making it available as a web service ('cloud')**

More info on AGPL v3 license

# OS Licenses compatibility

| Public domain | → | MIT | → | BSD-3 | → | Apache v2 | → | GPLv3 | → | AGPLv3 |

**General rule:** you can only use libraries distributed under a license that is more permissive than your distribution license

For example, if you distribute your software under the Apache license, you can use libraries under:

- Apache
- BSD
- MIT
- Public domain

# Useful link

▷ [LiEU Network Memo](#) 'Knowledge Transfer and its Process' p48-49: Valuation of Computer Software