



Summary of ESO's Intellectual Property and Technology Transfer policy

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1. Executive summary

ESO follows an Intellectual Property (IP) and Technology Transfer (TT) policy that complies with the basic mission and non-commercial character of the Organisation, and, at the same time, aims to maximise the return on investment of the ESO Member States (ESO MS) and to provide support for their economy. The objective of the ESO IP and TT policy is to make the technological developments of ESO known and available to third parties for the benefit of the ESO MS's economy and society as a whole, while at the same time safeguarding the needs of ESO to operate, maintain repair and upgrade the telescopes and instruments for the benefit of the whole scientific user community. Through the IP and TT activities ESO aims to strengthen its position as a centre of technological excellence.

2. Background

Recognizing the broader impact of research activities, the technology and knowledge transfer of international research centres and organisations became widely discussed by the member states of these entities in the '90s. As a consequence, several of them have adopted TT as an important activity of their respective organisation and decided to proactively search for market applications for their technological developments¹.

For ESO, the MS at that time were and still are mostly interested in the scientific return, and much less in TT. However, a TT Survey carried out by ESO in 2004 was highly appreciated by the MS, as it showed the industrial return they receive from their contributions to ESO and the indirect benefits to their economies and to society as a whole. The TT Survey is made available to the public on: <http://www.eso.org/public/industry/techtrans/Developments.html>

3. Driving principles

The following driving principles determine the IP and TT policy at ESO:

- Through the TT policy, ESO aims to consolidate its position as a centre of technological excellence for the benefit of the MS and society at large. The leading role of ESO's scientific research is unquestionable: the scientific results that astronomers generate using the ESO telescopes are unique and have greatest value for science and for the scientific community. However, compared with the wide awareness of these results, much less is generally known about the technical breakthroughs and tremendous technological achievement behind

¹ ESA 1990, CERN 1999

some of the technology that enables astronomers to undertake revolutionary science.

- Emphasis is given to the recognition aspect rather than to the reward aspect. It is important to emphasise that ESO, as a non-commercial public organisation, is not driven by a search for additional revenues from IP and TT activities.
- IP and TT policy has a strategic value as long as it is in line with the rules and mission of the Organisation. ESO's purpose, as defined in Article II (1) of the ESO Convention, is "to build, fit out and operate an astronomical observatory" and "to foster collaborations in astronomy", in other words facilitate fundamental research. Article II (4) additionally defines that "The Member States shall facilitate the exchange of persons and of scientific and technical information necessary for carrying out the programmes in which they participate". Therefore there is no explicit mission for ESO to do IP and TT activities. Nevertheless, owning and exploiting IP within the approved projects has a function and value by protecting the interests of the MS and of ESO.
- Cost effective solution. The experience of the other European intergovernmental research organisations shows that the costs of IP and TT activities can reach unreasonably high levels compared to the added value they generate. ESO intends to keep the costs as low as reasonably possible using manpower and expertise already existing in-house, and avoid establishing a TT office.

4. Objective and strategy

Based on the above principles, the objective of the IP and TT policy at ESO is to make the technological developments of ESO known and available to third parties for the benefit of the ESO MS and their economy and society as a whole. This TT policy is implemented via a proactive IP, technology licensing and knowledge transfer strategy.

Protecting commercially valuable IP by intergovernmental research organisations provides a control over the technology. Via this control ESO can ensure that the commercially valuable technology is not been given away freely to industry outside the ESO MS. Additionally, this control secures the rights for ESO to continue using freely a technology for the many years of operations, maintenance, repair and upgrade of the telescopes and instruments.

The other important part is knowledge transfer. ESO's educational and teaching programmes have been contributing to the transfer of know-how to and from ESO for many years, and will continue to do so. An average 50 students, fellows and associates spend valuable time at ESO every year, and many more attend

technology workshops and schools, allowing them to gain a professional experience and learn about the technologies used for the ESO telescopes and instruments.

5. ESO's IP rules

ESO's aim with its IP rules is to enhance the use of the developed know-how by the ESO MS, and at the same time to protect the rights that ESO needs to operate, maintain, repair and upgrade the telescopes and instruments for the benefit of the whole user community.

There are two types of IP that are involved in ESO projects:

- IP created internally;
- IP created externally;

5.1 IP created internally

For internally created IP, the ESO Staff Rules and Regulations specify that staff inventions belong to ESO, but this rule can also be waived by the ESO Director General (ESO DG). Also on the decision of the ESO DG, staff inventions, if a commercial potential is identified, might be protected by a patent.

Patents are not wealth by themselves; they generate wealth when they are exploited for the market. It is not part of ESO's mission to produce goods and services for the market, therefore ESO, through licensing, allows other entities to exploit its patents. Additionally, ESO offers non-patented know-how as well for licensing. The applicable licensing fees are available in Annex I to this document.

5.2 IP created externally

The majority of know-how developed for ESO arises from contracts and consortium agreements. The relevant IP rules are defined in Section V of the General Conditions of ESO Contracts, the latest version of which is available on: www.eso.org/public/industry/cp/docs/genconditions/GCEC_Munich_Dec_2014.pdf

It is important to emphasise that ESO's objectives with its IP rules is to secure the rights ESO needs to operate, maintain, repair and upgrade the telescopes and instruments in the most cost effective way, while at the same time supporting the economy and society of all MS. ESO is not exploiting any know-how developed by a contractor or consortium, ESO only uses this know-how for the operations, maintenance, repair and upgrade of telescopes and instruments.

Annex I. Licensing fees

Origin of Entity	Entity	Field of use	Up-front payment (EUR)	Royalties (based on net sales)
ESO MS and Chile	Universities and similar scientific institutes	For its own purposes in the field of scientific research and applications	Free of charge	Free of charge
		Commercial purposes		1%
	Industry contributed to the developments through an ESO Contract from the design phase	In the field of astronomy	Free of charge	2%
		In other fields		3%
	Industry	In the field of astronomy	5000	2%
		In other fields		3%
Non-ESO MS	Universities and similar scientific institutes	For its own requirements in the field of scientific research and applications	Free of charge	Free of charge
		Commercial purposes	10000	3%
	Industry contributed to the developments through an ESO Contract from the design phase	In the field of astronomy	5000	2%
		Any field		4%
	Industry	Any field	10000	4%