

EIP



Key provisions and IP considerations of the incoming EU CHIPS Act

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- Draft regulation not explicit on IP policy but some early guidance is on offer
- Act offers extensive opportunities for investment and collaboration
- Risk that SMEs in particular could give away too much of their technology

The EU CHIPS Act is the European Union's (EU) attempt to deal with global semiconductor supply chain challenges which have emerged since the onset of Covid-19 in early 2020. Draft legislation was produced by the European Commission in February 2022, and this has now passed to the European Parliament for review. It is expected that the Parliament will vote in favour of the legislation in the first quarter of this year.

Europe has been particularly badly hit by semiconductor shortages. While it is a major consumer of chips in sectors such as automotive and healthcare, it produces the lowest number of chips for any major economy. With the US, China and other countries channelling huge amounts of support into their domestic chip sectors, the EU CHIPS Act is hoped to increase Europe's global manufacturing share to around 20% by the end of the decade.

The Act proposes several initiatives to support Europe's semiconductor industry, and these have been broadly divided into three key "Pillars". Pillar 1 is the Chips for Europe Initiative and aims to bolster Europe's research and development capabilities. Pillar 2 is the Framework to Ensure Security of Supply and aims to fast-track new manufacturing facilities. Pillar 3 is for Monitoring and Crisis Response and aims to facilitate access to improved information about problems in the semiconductor supply chain. In addition, the Act includes the provision of new funding channels.

Each of these Pillars presents opportunities for semiconductor companies. Funding from the EU to support these activities will be welcome. However, in some instances, access may be limited to “first movers”. Furthermore, the EU is likely to stipulate Intellectual Property (IP) policy for some of the Pillars. Companies will need to carefully consider whether the EU’s IP policies are appropriate for them.

The Three Pillars

Pillar 1 is concerned with improving the EU’s research and development (R&D) capabilities. It is acknowledged by the Commission that the EU includes some world-leading R&D facilities, however, it is also noted that these R&D capabilities do not always translate to commercial production. To address this, a new ecosystem is proposed for collaborative R&D: “from the lab to fab”, is the EU’s tagline for the new ecosystem.

The ecosystem will include a virtual design platform which will include the latest Electronic Design Automation tools and IP libraries. The platform is intended to foster collaborative innovation on leading technologies between established semiconductor players, design houses, SMEs and academia.

Pillar 1 also proposes investment in existing and new pilot lines. These pilot lines will be fully integrated with the virtual design platform, to enable companies to gain access to prototyping facilities for the latest technologies. Such access is presently not available at all, or only through specific private partnerships.

In addition to the above, the EU proposes a series of competence centres. These will be linked to the design platform and the pilot lines, to develop skills in the semiconductor sector, and to provide SMEs with guidance on accessing the new facilities. There is also provision for specific support for quantum technologies, an area recognised as needing special support to reach maturity.

Finally, Pillar 1 provides a range of funding proposals, including direct public funding to support the projects noted above, and better access to equity financing and European Investment Bank (EIB) backed loans.

Pillar 2 aims to support new manufacturing facilities in Europe. The Act defines the concept of a First-of-a-Kind (FOAK) facility. In broad terms, a FOAK is a facility which offers a dimension of innovation not yet seen in the EU. This might be in relation to a production node, substrate material, process innovation or energy or environmental performance. The existence of a pilot line for the technology in question does not prevent a FOAK production-level facility for that technology. The EU specifically envisages two

main types of FOAK facility. The first is an Integrated Production Facility which provides, design, manufacturing and packaging under one roof. The second is a so-called Open EU Foundry, which is akin to a pure-play foundry.

Any company wishing to build a FOAK facility in the EU may apply for the FOAK designation. Once achieved, the FOAK designation provides various benefits, including a streamlined planning and environmental application process and preferential access to the design platform and pilot lines proposed under Pillar 1. However, the most important benefit is the relaxation of the EU's state aid restrictions. The EU has very strict rules that prevent individual member states offering state aid if it might lead to a distortion of the market within the EU. However, the FOAK designation provides a safe harbour in which the EU will approve support from member states, provided the FOAK facility is seen to benefit the EU overall. Although the EU CHIPS Act has not yet passed into law, we have already seen one example of the principles it enshrines being put into practice. STMicroelectronics' new Silicon Carbide facility in Italy is set to receive state aid from the Italian government. In approving the funding, the EU specifically referred to the principles laid out in the EU Chips Act.

Pillar 3 is concerned with information about the status of semiconductor supply chains and ensuring continuity of semiconductor supply to critical industries during times of disruption. It provides for mandatory information requests, in which the EU can ask governments, industry bodies and semiconductor companies for information about supply issues and merger and acquisition activity, that might have an impact on the supply of semiconductors in the EU. It also allows the EU to make mandatory orders for semiconductors to supply critical sectors.

Key opportunities and Intellectual Property considerations

The proposals under the EU CHIPS Act should certainly be welcomed, and there is no doubt that many organisations will benefit from the plans. However, any collaboration that involves sharing of R&D effort comes with risks. It will be important for companies to understand the implications for their IP, and to start thinking about what IP strategies to adopt.

Collaborative R&D under Pillar 1

Although the draft Regulation does not contain any significant provisions in the way of IP policy, the EU Commission has provided some early guidance in its Working Document on the EU CHIPS Act. This document makes the following key points:

- Participants should be prepared to share background IP in order to facilitate the deployment of foreground IP in specific product-market combinations;
- Provisions for co-ownership of IP should be expected when sharing risks and investments;
- Open IP platforms are desired to facilitate rapid growth. However, exclusive IP rights may be possible in certain situations, for example where one party is the exclusive contributor to R&D.

Background IP is the technology that a company owns prior to entering into any joint development agreement. Foreground IP is the technology that is developed during the course of a collaboration. Any company that has been involved in private joint development agreements will understand the need to properly delineate the two. Ensuring a company's background IP is properly documented, whether this be using patents or trade secrets records, is key.

This is even more relevant with publicly-funded collaborations. The EU, through the entities established by the EU CHIPS Act, will dictate IP policy. This may be more difficult to negotiate compared to traditional private agreements. Furthermore, there may be several parties to each agreement, increasing the complexity for ownership of foreground IP. Being clear about what you own prior to entering these agreements will become even more important.

The EU has proposed co-ownership provisions when inventions are developed jointly. This might occur frequently where companies are working closely on new technologies. While the EU presents this as a straightforward solution, co-ownership of IP does present various problems. For example, it may restrict a company's ability to sell or licence technology in the future. It will be important for companies to carefully consider the terms of co-ownership, prior to entering into any agreements.

Given these factors, what should semiconductor companies be thinking about when considering taking part in Pillar 1 collaborations?

The advantages of taking part in EU-funded collaborative R&D may seem obvious, but any potential participants should first consider whether the benefits outweigh the compromises that will need to be made on IP ownership. The balance of this equation is likely to be different for different types of organisations. For example, established

semiconductor companies that have the means to fund their own R&D may prefer more traditional private joint developments. They are likely to have more control over ownership of IP, and therefore have exclusive use of R&D outputs. The benefits of taking part in EU-funded R&D collaboration may seem more marginal.

On the contrary, SMEs are far more likely to find that access to the proposed design platform and pilot lines, together with the associated funding, are more important than IP ownership considerations. This does mean that SMEs need to be particularly careful when signing up to the EU's IP policies. There is a real risk that SMEs who do not properly understand the relevant IP policy end up giving away too much of their technology. SMEs should pay particular attention to marking out their background IP. They should also ensure that they understand the implications of joint ownership of IP, especially when this might occur with much larger, better funding industrial partners.

The nature of collaborative R&D also means that companies should pay particular attention to trade secrets. Some types of know-how are better kept as trade secrets, rather than being patented. For example, process technologies which are impossible to reverse engineer are often kept as trade secrets. However, when entering collaborative R&D projects, it may be necessary to disclose this know-how to other collaboration partners. While confidentiality provisions will exist, the number of organisations involved will inevitably increase the risk of know-how leaking between organisations which may cause companies to turn the dial further towards patenting, to ensure they remain in control of their know-how.

Patents also provide a very clear way of delineating background and foreground IP. This is more difficult with trade secrets, especially if they are not well documented. It is of course good practice to ensure trade secrets are well documented, not least so that companies can prove what is theirs in the event of a dispute with a third party. Entering into joint collaborations provides another reason to ensure that key corporate know-how is either documented as a specific trade secret or protected using patents.

It is always good practice to regularly review company IP strategy, and in particular the approach to trade secrets and patents. Any organisations considering taking advantage of the EU CHIPS Pillar 1 initiatives should begin reviewing their approach to patents and trade secrets, to ensure their background IP is clearly defined.

Supply of equipment, materials, or services under Pillars 1 and 2

The EU Chips Act provides various opportunities for suppliers of equipment, materials and services. For example, under Pillar 1, the EU specifically notes the need for suppliers to contribute to new and existing pilot lines. Furthermore, any new manufacturing

facilities achieving FOAK status under Pillar 2 will have a requirement for equipment, materials and services.

p6

Suppliers should understand the contract terms relevant to their businesses. This will be particularly important under Pillar 1, where the “Open IP Platforms” described above may extend to suppliers of equipment and materials. In some instances, suppliers may also be active contributors to R&D for new pilot lines. Suppliers will need to be clear on the IP implications under pure-supply versus collaborative R&D arrangements.

The details of these terms are not yet known. Under Pillar 1, so-called European Chips Infrastructure Consortia will be responsible for setting up new pilot lines and dictating IP policy. It will be important to keep abreast of new proposals, as and when they occur, so that the details of IP policy can be understood.

Opportunities for Integrated Device Manufacturers and pure-play foundries for FOAK status

Pillar 2 is intended to make it quicker and easier for new manufacturing facilities to be established in the EU. The new, streamlined process will certainly be appealing to Integrated Device Manufacturers (IDMs) and pure-play foundries alike.

One of the more obvious impacts of Pillar 2 is that we are likely to see more facilities in more locations. As noted above, we’ve already seen the EU apply the Pillar 2 principles in approving state aid for STMicroelectronics’ new Silicon Carbide facility in Italy. This will require companies to think carefully about their European patent strategy. Traditional semiconductor patent strategies have focused on Germany, primarily owing to the lack of any significant semiconductor manufacturing capacity in Europe. We recommend keeping track of where FOAK facilities are approved and adjusting patent filing strategies accordingly.

One of the benefits of receiving FOAK status is priority access to pilot lines. However, as noted above, that access may come with stipulations about IP ownership that are not necessarily favourable. It will be important to consider whether access to pilot lines provides sufficient advantages to outweigh the compromises on IP ownership, as noted above. FOAK status will also give inherent first-mover advantage to those companies. Given the capital investment required to build new manufacturing facilities, this may reduce the importance of IP to the owners of such facilities, especially on the process side, where much know-how can be kept secret.

Conclusion

The EU CHIPS Act provides exciting opportunities for semiconductor companies operating in the EU and semiconductor companies across the supply chain will be looking closely at the details to understand how it will apply to them. While there are clearly many upsides to leveraging the EU CHIPS Act, it will be very important for companies to understand the implications for IP ownership and strategy.

The Act is expected to pass to the EU parliament for review in early 2023. The present view seems to be that the Act will pass without too many changes at some point later in 2023. Once that occurs will start to see more details emerge about how the Act will be implemented. We will be watching developments closely and providing updates as they emerge.