



## Key Achievements

**ESCP-4i Name and acronym:** *European Semiconductor Cluster internationalisation Project – Silicon Europe Worldwide*

**Partners:**

- *mi-Cluster,*
- *Minalogic,*
- *High Tech NL,*
- *Fondazione Distretto Green & High Tech Monza-Brianza,*
- *Silicon Saxony,*
- *DSP Valley*

**Summary of key achievements:**

Silicon Europe Worldwide started in January 2016 as a two-year project funded by the European Commission to implement the internationalisation strategy of Silicon Europe strengthening the global impact of this European cross-regional ecosystem. In the meantime, the project has come to an end and the activities are intended to be continued as part of the internationalisation program of Silicon Europe, an European cluster collaboration in the area of electronic components and systems.

**Approach**

The first step was to build a relationship on intermediary level with the selected regions. As such, a relation framework was created which later on could be used to develop international activities and services in favour of our members. At the same time, opportunities for FDI in Europe were explored. Given the limited resources and time, not all regions could be approached simultaneously and to an equal extend. It was decided to pursue the relationship building in one region at a time starting with the regions that came out first and second in a study carried out by Silicon Europe prior to this project, namely Taiwan and North East USA. In the course of the project, the next region would be selected.

**Taiwan – the first region**

Not only was Taiwan the first region we approached, it was also the region we got a bit of a head start. Some of the project partners already had a good relationship with Taiwan for several years, something we could really benefit from. Secondly, we had organised a fact finding to Taiwan earlier in 2015, several months before the project actually started which allowed us to get to know several relevant parties as TAITRA, the ECCT as well as some high-level representatives of the ministry of economy. As a result, the first outbound mission involving individual companies already took place in June 2016. At the occasion of the EU-Taiwan Industrial Dialogue, the European Innovation week was organised. During a four day program, companies and clusters got the opportunity to visit the COMPUTEX trade fair, participate in matchmaking events and listen to interesting presentations at a conference. The first in-depth meetings between European clusters and their Taiwanese counterparts took place here. In October 2016, we could welcome a Taiwanese company delegation headed by the industry association MIRDC visiting the SEMICON Europa fair in Grenoble. A guided tour visiting all the Silicon Europe booths and a dedicated matchmaking event were organised. After visiting SEMICON Europa, the delegation visited the PACA region in France hosted by the cluster SCS. At the occasion of this

inbound mission two MoU's have been signed: one of MIRDC with Minalogic and one of TAITRA with Silicon Europe Worldwide aiming at intensifying the collaboration between the two parties.

In June 2017, the Industrial Dialogue with Taiwan took place in Brussels. Alongside this political event, two consecutive events were organised in collaboration with the EC and EEN: the EU-Taiwan Event on Industry of the Future followed by the Business Connection Forum Brussels. During this three day program, companies and clusters got the opportunity to participate in matchmaking events and listen to interesting presentations at several seminars.

In September 2017, Silicon Europe Worldwide was co-organiser of a joint booth at SEMICON Taiwan offering several of our SMEs the opportunity to exhibit at this show.

The last event during the project took place in November 2017. We welcomed at that time a Taiwanese company delegation at SEMICON Europa in Munich. Similar to last year, they continued their journey by visiting the Silicon Europe clusters DSP Valley and High Tech NL.

### **Second Region: The North Eastern region of the USA – Upstate NY**

The North Eastern region of the US was our second region. In contrast to Taiwan, we started with an almost blank page. In November 2016, a fact-finding mission to the North Eastern region of the USA was organised. This allowed us to start building a relationship with relevant people and organisations in the high-tech corridor from Albany over Syracuse to Rochester. Starting from there, we started organising a company mission to Albany. Unlike with Taiwan, no other European agencies were involved in the organisation of the event. Finally, in October 2018, the Business Connection Forum Albany took place. During this three-day forum, companies, clusters and other organisations got the opportunity to meet, listen to interesting presentations in several seminars and participate in matchmaking events.

During the forum, Silicon Europe Worldwide (represented by Silicon Europe) and NY loves Nanotech (represented by the Center of Economic Growth) signed an MoU. Both parties aim to further strengthen their cooperation in support of American and European joint business and technological endeavours, particularly in the field of innovative electronics and software technologies. A first incoming mission with US SMEs is currently discussed for 2018.

### **South East Asia - The third region**

The Silicon Europe clusters as well as a selection of SMEs have been consulted to determine the third region. We noticed a strong interest for developing relations with several countries in South East Asia. The following 4 countries ended in the top 4: China, Japan, S. Korea and Singapore. At this particular moment, we have decided not to make a choice but to keep all four on the shortlist. After all, the global political and economic situation as well as the particular interest of SMEs can easily change over time. A more specific region will be selected, very likely among the mentioned ones, at the moment resources will become available to Silicon Europe for the continuation of the internationalization activities towards those regions.

### **Conclusions**

Within the timeframe of two years, we built a relation framework with the two selected regions, Taiwan and the North Eastern region of the USA even supported by three MoUs. Starting from there, several activities involving SMEs have been organised. With Taiwan, we (co-) organised in total 2 outbound missions and hosted 3 inbound missions. And with the North Eastern region of the USA we organised one outbound mission. An inbound mission is under preparation. In total, more than 130 SMEs and 35 cluster organizations have been involved in our activities. Several of them have established first contacts that eventually on longer term could lead to a partnership or a business.

This project has clearly laid down the foundation for the Silicon Europe Alliance for developing internationalization activities outside of Europe. Our main challenge now is to sustain the dynamics generated by the Silicon Europe Worldwide project in order to take advantage of what has been

established and further develop and extend these relationships successfully for the benefit of our members. Our 2+ years of experience has learned that internationalization takes time and consistency.

### **Cluster cooperation achievements:**

#### **Gaia (ES- cluster)**

it allowed us in January of this year to present a proposal for a European project with one of the largest Taiwanese technology centers.

### **SME cooperation achievements:**

- Microtest (EU Innovation week, Taiwan, 2016): first contacts with board production companies during event, then Companies did proceed by themselves. No additional info available by companies aiming to manage the potential business directly.
- Trustech/Aizoon (Business connection forum, Albany, Oct 2017): Company (actually the USA representative office) had presentations in the dedicated health session and some contacts with USA entities during B2B session. New meeting with Trustech/Aizoon done in January in Turin exploring potential follow-up In USA as well as in Italy.
- AZcom (2016 TW, 2017 BRX): Company had direct contacts with Taiwan ITRI institution; partnership with ITRI in a trans-national project 5G-CORAL (European and Taiwanese industrial and academic joint partnership to develop a 5G Convergent Virtualised Radio Access Network Living at the Edge on going). Project on going.
- Hap2U signed a contract for R&D collaboration and co-development of a PoC (Proof of Concept) with a Large Taiwanese manufacturer of tablets and opened a sale and business development office in Taiwan.
- KOBUS (Business connection forum, Albany, Oct 2017) has engaged in discussions with SUNY Poly Institute for a sale contract (Lab equipment)

### **Testimonials from cluster and SME:**

#### Fabmatics (DE)

*„As Fabmatics GmbH, we participated in the EU-Taiwan Event on Industry of the Future as speaker for the Smart Manufacturing seminar and in the Silicon Europe joint booth at SEMICON Taiwan. These events organized by Silicon Europe Worldwide were a vital ingredient to successfully expand our business to clients in Taiwan. We appreciate the fast and direct support by our cluster organization Silicon Saxony and we are looking forward to similar opportunities.” (member of Silicon Saxony)*

#### Microtest (It)

*On top of all, this event has been a great opportunity to meet both Clusters as well business persons and local Companies and gave to all of us, I believe, a quite deep insight in the local economy paving the way for future developments and contacts. The Company visits were absolutely of interest and for sure gave us the flavour of the development spirit and the possibility to have direct contacts with the high level management setting a first link which may open interesting perspectives for the future.*

#### Trustech/Aizoon (It)

*Good opportunity to show to research and business community the evolution of the lab\_on\_chip Trustech/Aizoon has been developing, looking forward to set up relationships and potential partnership to complete the engineering phase. Nice event, possibly to be replicated in the future.*

#### Dinycon Sistemas (ES)

*“Dinycon Sistemas” participated in the Business Connection Forum in Albany (New York, USA) in October 2017. This event has been a great opportunity to meet both Clusters as well business persons and local Companies and offered us a great opportunity to explore the USA market and to learn about*

*the potential of this market for our company, also to know the main research lines. It certainly opened perspectives for the future.*

Gaia (ES- cluster)

*“Cluster GAIA participated in the European Innovation Week in Taiwan in 2016. This event has been a great opportunity to meet both Clusters as well business persons and local Companies and offered us a great opportunity to explore the Taiwanese market and to learn about the potential of this market for our SME’s. In addition, it allowed us in January of this year to present a proposal for a European project with one of the largest Taiwanese technology centres. It certainly opened perspectives for the future.”*

EpiGaN (BE)

*“In September 2017, EpiGaN participated in a joint booth at the Semicon Taiwan Show organised by Silicon Europe Worldwide. EpiGaN really appreciated the opportunity to attend one of the global leading Semiconductor events through the collaboration and organisation of the different Silicon Europe clusters. EpiGaN’s booth presence was perfect to meet with existing and also link-up with potentially new Asian customers. The possibility to present the company and products in a specially organized exhibitor forum was excellent and generated good awareness and visibility for EpiGaN. Furthermore, the interaction with the European colleagues at the joint enriched the overall experience. We will certainly consider to participate in 2018 again”.*

Bright Red Systems (AT)

*“As a start-up, we appreciated the preparatory work of Silicon Europe Worldwide who took the burden of organizing a booth at SEMICON Taiwan 2017. Thanks to the joint booth, we had a much bigger visibility in Taiwan than we could have had on our own”.*

Hap2U (FR)

*“Hap2U is a company that develops a disruptive solution which adds the sense of touch in order to improve the user experience through all tactile displays.*

*In June 2016, we had the opportunity to be included into a Silicon Europe/Minalogic Delegation to exhibit at the Computex trade show, and participate into the European Innovation week, incl the B2B meetings. We arranged as well for an export introductory mission by Business France at that time. This opportunity came at the right moment, where our company was in the process of investigating the Taiwanese market and then eventually the recruitment of a representative in Taipei and the opening of a small office. As said, the conjunction of being included into the Taiwanese strategy of the Silicon Europe project and our own efforts and strategy created a very productive opportunity for us to try and develop our market in Taiwan”.*

KOBUS (FR)

*“KOBUS develops highly efficient cost effective CVD technologies used for R&D, pilot and manufacturing of semiconductor, LEDs, MEMS and photovoltaic devices. Our products are mainly meant for international markets. In consequence the Business Connection Forum in Albany was a good opportunity to meet potential partners and clients in a more effective way as on more traditional trade fairs. Thanks to Minalogic and the clusters’ support we could accelerate the contact process and detect the good partners more easily and quicker”.*

**Key recommendation(s) on the future of the "Cluster go International" initiative:**

- Improve the coordination among internationalization initiatives at EU level. A better alignment should help to improve the efficiency of the overall European internationalisation program.

## Silicon Europe Worldwide – Phase 2

- Institutionnal support happened to be helpful for our actions (i.e. actions with Taiwan organized in the context of High-Level Forum) whereas it was a bit more difficult with the USA (to get the right people involved at the right moment)
- Building and developing relationships is a matter of time and continuity. A 2 year timeframe is short in an internationalisation context. We therefore advice to consider longer project periods.
- The current EU funding program does not offer many possibilities for internationalisation. To support the sustainability of the initiated programs, allowing to continue the relation development taking stock of the expertise and contacts gathered (without loosing them), funding possibilities on European level for internationalisation should be introduced.
- Building and developing relationships with third countries requires a significant effort and time from the people involved. The current Cluster Go International funding level allows to touch the topic but is insufficient to really develop the relation in a solid way.
- SMEs are often only prepared to spend money for internationalisation when the business opportunity is almost guaranteed. SMEs are therefore difficult to convince to participate in missions or other activities with a more explorative character. We recommend to increase the possibilities for offering financial support to SMEs as part of the cluster internationalisation program. Maybe in the form of cascade funding?

**Please indicate the number of events attended by the partnership by category (preparatory events, C2C events and B2B events):**

TARGET COUNTRIES	EVENTS (Number)				
	Preparatory events, e.g. workshop, seminars, visits (excluding C2C and B2B events)	C2C Events	C2C meetings	B2B Events	B2B Meetings (including C2C)
Taiwan	<b>3:</b> information sessions (DSP/HTNL, Minalogic, Silicon Saxony, Distretto)	<b>2</b> EIW, EU-Taiwan event on Industry of the future	estimation*: > 25	<b>3</b> EIW, EU-Taiwan event on Industry of the future, BCF Brussels	<b>543</b>
USA	<b>4:</b> preparatory meeting@ SEMICON Europa 2016, fact finding mission to the US, information sessions (Minalogic, Silicon Saxony)	<b>2</b> EU-US matchmaking event @Hannover Messe  BCF Albany (there where C2C discussions / meetings)	estimation* 5	<b>1</b> BCF Albany	<b>46</b>
<b>TOTAL</b>	<b>7</b>	<b>3</b>	<b>9</b>	<b>4</b>	<b>589</b>

\* C2C monitoring is done by inno TSD and SPI, the organisations responsible for the C2C matchmaking we participated in

*Please indicate the number of respective stakeholders (clusters and SMEs in Europe and Third countries) involved directly in the development of the partnership activities*

<b>STAKEHOLDERS INVOLVEMENT in the development of activities (excluding surveys and promotion activities) targeting cooperation with 3<sup>rd</sup> markets (Number)</b>				
	EU Clusters	EU SMEs	Clusters and other intermediary organisations from 3 <sup>rd</sup> -country	SMEs and businesses in 3 <sup>rd</sup> country <sup>1</sup>
Taiwan	36	106	17	303
USA	6	26	14	29

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<sup>1</sup> Numbers from b2match (organizations indicated their type themselves)

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TARGET COUNTRIES	OVERVIEW OF COOPERATION CASES BY EUROPEAN CLUSTERS (eg. Collaborative project initiated, MoU signed, other initiatives)					
	Cooperation case (name/nb)	Brief description		Types of cooperation objectives (select category numbers in table below)	Sector / Technology	3 <sup>rd</sup> -country Partner name
	1) Collaboration project (e.g. exchange visits), 2) Formal agreements (e.g. MoUs) 3) Representation office/role appointed by the consortium 4) Other					
	<b>Type</b>	<b>Nb.</b>				
Taiwan	1)	3	Already two delegation visits by TAITRA at SEMICON Europa took place. One joint booth @SEMICON Taiwan was executed.	1,2, 3, 4, 11, 12, 13, 14	ICT	TAITRA SEMI Taiwan
	2)	2	Silicon Europe Worldwide and TAITRA signed a MoU to foster collaboration. Minalogic and MIRDC signed an MoU	1,2, 3, 4, 11, 12, 13, 14	ICT	TAITRA MIRDC
	3)	6	TAITRA, regional trade representatives (Flanders, Belgium Germany, Netherlands, Italy, France), ECCT	1,2, 3, 4, 11, 12, 13, 14	ICT	TAITRA, ECCT, German Trade Office Taipei, FIT Agency, Italian Economic Trade and Cultural Promotion Office, Taipei Representative Office in the EU and Belgium
	4)					
USA	1)	3	NY loves Nanotech visited the European clusters during SEMICON Europa 2016 and 2017 Silicon Europe Worldwide went on a fact finding mission to the US	1,2, 3, 4, 11, 12, 13, 14	ICT	NY loves Nanotech
	2)	1	Silicon Europe Worldwide and NY loves Nanotech signed a MoU to foster collaboration.	1,2, 3, 4, 11, 12, 13, 14	ICT	NY loves Nanotech
	3)	1	fusion market group, NY loves Nanotech	1,2, 3, 4, 11, 12, 13, 14	ICT	Fusion market group, NY loves Nanotech
	4)					
<b>TOTAL</b>		<b>16</b>				<b>10</b>

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OVERVIEW OF COOPERATION CASES BY EUROPEAN SMES (eg. Collaborative project initiated, MoU signed, other initiatives)						
	Cooperation case (e.g. business project, innovation test, visit) (name/Nb.)		Brief description	Types of cooperation objectives (select category numbers in table below)	Sector / Technology	3rd-country Partner type of organisation (and name if not confidential)
	Name	Nb.				
Taiwan	Business project	1	Hap2U signed a contract for R&D collaboration and co-development of a PoC (Proof of Concept) with a Large Taiwanese manufacturer of tablets.	1	ICT	Large industrial
Taiwan	Open an office	1	Hap2U opened a sale and business development office in Taiwan	5	ICT	
Taiwan	Open an office	1	ALEDIA opened an office after their participation to the Information Session on Taiwan that took place in March 2016 in preparation to the European Innovation Week and matchmaking at Computex.	5	ICT	
Taiwan	Business project	1	Fabmatics GmbH (Germany)	3	Automation equipment	Chip production fabs
Taiwan	visit	1	CORIAL was Invited by MIRDC to give a speech at LED Taiwan in 2016	12	semiconductor compounds, optoelectronics	SME and industrial association
USA	Business project	1	Kobus (France) has started discussions for a sale agreement	13	Semiconductor Equipment	University
...						
TOTAL						

*Type of cooperation objective: see*



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Type of cooperation objective (select one):	
<input type="checkbox"/> Research & Development (1)	<input type="checkbox"/> Staff exchange (9)
<input type="checkbox"/> Technology transfer (2)	<input type="checkbox"/> Academic (10)
<input type="checkbox"/> Exports (3)	<input type="checkbox"/> Foreign Direct Investment(s) (FDIs): Inward/outward (11)
<input type="checkbox"/> Imports (4)	<input type="checkbox"/> Organisation of joint business events (12)
<input type="checkbox"/> Sales office representation (5)	<input type="checkbox"/> Knowledge sharing & information exchange (13)
<input type="checkbox"/> Joint venture (6)	<input type="checkbox"/> Establishment of business contacts among members (14)
<input type="checkbox"/> Merger and Acquisition (7)	<input type="checkbox"/> Other (specify):
<input type="checkbox"/> Soft Landing services (8)	

### More details on Cooperation cases<sup>2</sup>:

1) by EU clusters<sup>3</sup>

EU Cluster organisation	Sector	Partner organisation		Explain/describe cooperation case (please elaborate)	Main steps undertaken	Next steps envisaged (if any)
		Name	Country			
High Tech NL		ITRI, TAITRA (NL-offices)	Taiwan	<i>Three parties discussed and decided on a more focussed approach to bring Nl and Tw companies together for joint development and business</i>	Meetings with ITRI (NL) during 2017.	<i>Not defined yet</i>

<sup>2</sup> Cooperation with:

- other cluster partnerships (which ones?)
- other EU initiatives (e.g. Low Carbon business Action, EU Gateways)
- others

<sup>3</sup> As mentioned on page 3 Table: Cooperation cases by EU clusters

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				<i>generation as well as for system engineering. Actions will be scouting for relevant companies in NL and Tw and bring them together based on a a priory good match. The business associations will play an important role here. Venues for such events could be during the Semicon trade fairs or similar.</i>	Meeetings with TAITRA (NL) during the Semicon Europe 2017	
Minalogic		MIRDC	Taiwan	<p><i>MoU signed between Minalogic &amp; MIRDC to boost the business and R&amp;D relations between their members. Actions:</i></p> <ul style="list-style-type: none"> <li><i>i. promote trade relations</i></li> <li><i>ii. exchange of information</i></li> <li><i>iii. promote exhibitions and conferences of both organizations</i></li> <li><i>iv. establish contacts between organizations and encourage reciprocal visits</i></li> </ul>	Taiwanese Delegation @ SEMICON Europe 2016 + matchmaking event + Exposition of Minalogic on the MIRDC booth @ SEMICON Taiwan Sept. 2017	<i>Not defined yet</i>
GAIA		(ITRI)	Taiwan	European Project proposal including Taiwanese research organization		
Distretto		ITRI	Taiwan	Member company involved in 5G-Coral Project		

2) by European SMEs<sup>4</sup>

EU SME	Sector	Partner organisation		Explain/describe cooperation case (please elaborate)	Main steps undertaken	Next steps envisaged
		Name	Country			

<sup>4</sup> As mentioned on page 4 Table: cooperation cases by European SMEs

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						<i>Ex: Visit, participation to future events, mission of companies, results of ongoing project, preparation of new project,</i>
Fabmatics GmbH	Automation equipment	confidential	Taiwan	sales of automation equipment	confidential	Participation in SEMICON Taiwan 2018
Hap2U	Hardware	Large manufacturer of tablets	Taiwan	<i>PoC development (proof of concept)</i>	Contract for a PoC development	Business contract if PoC is convincing
KOBUS	Equipment	Suny Poly	USA	<i>Discussions for a Sales agreement</i>	Business discussions	Possible contract for equipment purchase