Deliverable – D5.3 Dissemination plan



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1	Introd	luction	3				
	1.1	Purpose of the document	3				
	1.2	Document Organisation	.3				
	1.3	Methodology	.3				
	1.4	Application Area	4				
2	Exec	utive Summary	4				
3	Disse	emination to a non-technical audience	5				
	3.1	Video communications	.5				
	3.2	Social Media	6				
	3.3	Outreach events	6				
	3.4	Transfer knowledges in universities6					
4	Disse	emination to Industry	7				
5	Disse	mination to the Scientific Community	8				
	5.1	Publications and conferences	.8				
	5.2	Winter/summer school	10				
	5.3	International workshop	11				
	5.4	Contributions to IRDS roadmaps	12				
6	Disse	mination planning	13				

1 Introduction

1.1 Purpose of the document

The D5.3 *Dissemination plan* goal is to present the strategy of disseminating project progress and results to the relevant industrial and scientific communities. SEQUENCE project dissemination will follow three main strategies, in which communication contents and channels are tailored to three different groups:

- Non-technical audience
- Industries
- Scientific communities

In this frame, the main aim of the dissemination plan is to successfully communicate about SE-QUENCE outcomes across Europe and internationally. In details, we will:

- Define the targeted groups to spread out SEQUENCE outcomes
- Plan a list of activities for achieving the dissemination to these targeted groups
- Evaluate and monitor the completion of the proposed activities

We will pursue the widest diffusion of project results. To disseminate the project, the SEQUENCE partners will communicate SEQUENCE outcomes during conferences, symposium and workshops, exploit personal networks and contacts, and write and publish journal papers.

1.2 Document Organisation

The deliverable is separated in 6 sections. Sections 1 and 2 introduce the communication strategies of the SEQUENCE project to the reader. Sections 3, 4 and 5 are dedicated to the three different targeted groups of the SEQUENCE project: non-technical audience (Section 3), industries (Section 4), and scientific communities (Section 5). Each of these three sections will describe the dissemination objectives, the messages, as well as the envisioned communication channels. Finally, Section 6 completes this deliverable with a planification of the dissemination actions.

1.3 Methodology

The dissemination plan focuses on answering the following questions along the following steps:

To whom?	Target groups of dissemination (Sections 3, 4 and 5)
What?	What the consortium should disseminate in order to maximize the
	impacts of the project.
How?	The tools and the communication channels that will be used to
	propagate the consortium messages to the widest audience.
Why?	The reason behind each target group and the aim the consortium
	would like to achieve through the results' dissemination.
When?	The timeline and planification of the dissemination.
By whom and with whom?	The person or team responsible for a specific part of SEQUENCE dis-
	semination plan, keeping in mind each partner's skills and contacts.

Table 1 – Methodology for the SEQUENCE dissemination plan

1.4 Application Area

This document serves as a management (Work Package 6) tool to define the dissemination and communication framework and guidelines for the project consortium, as well as project partners. It will be used as a reference document to refer to during the project duration, including for regular monitoring and evaluation. Depending on project progresses and external factors, the dissemination plan will be updated and adapted to fit to the needs and to deliver the best possible dissemination for SEQUENCE. The first version of the dissemination plan is due for M18, the final version of the dissemination plan is due for M36.

2 Executive Summary

The SEQUENCE Project dissemination activities will aim to make visible the project's outcomes and findings, in a plain language, to both scientific and non-specialist audience.

The dissemination of knowledge and expertise between the partners is built into the work package structure and project management. Face-to-face meetings as well as regular web-based consortium meetings will be used to share information between the partners in a timely and efficient manner. The dissemination and communication work package is focused on the channels for communication of the project aims and research achievements to groups outside the consortium. All partners have excellent track-records in the dissemination of results in leading scientific journals and at esteemed international conferences. Publicly-funded research bodies have an obligation to disseminate, while for the industrial partners and SME's, publication of state-of-the-art results maintains their profile and high- tech reputation. Some partners are already active as conference chairs/organizers. (IEDM, WODIM/INFOS, ESSDERC/ESSCIRC, WOLTE, IRDS) as well as program committee members in the materials, device/circuit, and millimeter-wave and THz community, for example at DRC, IEDM, IPRM/ISCS, IMS, WODIM/INFOS, EUROSOI-ULIS, ESSDERC/ESSCIRC, WOLTE.

The overall aim of the management committee in relation to project dissemination is to ensure the maximum visibility of the project through innovation and impact, to ensure the intellectual property is secured, and to ensure different target communities are aware of the work and accomplishments of SEQUENCE as a project supported by the European Commission. All abstracts for conferences and manuscripts for journal publication are submitted via web portal in a timely manner to the management committee for this type of dissemination clearance and approval.

Dissemination strategies are differentiated according to specific targets, guaranteeing the initiative also after the end of the project. Multiple communication channels are used to reach the audiences, including presentations at international congresses, publications in scientific journals, existing social networks (twitter) and social-web based tools, etc.

3 Dissemination to a non-technical audience

This activity is central to the dissemination as it plays a critical role in explaining the importance of Nanoelectronics and Quantum Technologies to a broad range of applications, which have a big impact on the everyday lives of people in Europe, spanning the use of advanced semiconductor technologies in communications, health care, and the environment both now and into the future. This area of dissemination is also important to explain and justify to the broader public why it is essential for the European Union to invest in research into the next generation of technologies. Also, sustainable innovation in the field of micro/nano technologies is dependent on encouraging and attracting talented young people into the field.

3.1 Video communications

We worked with dedicated personnel at Lund University to make videos to communicate our research work and its significance to the broader public. A video titled "**The coolest hot topic of our age**" has been uploaded to YouTube, and could be used as short clips on "EuroNews", presentation at the EuroNanoForum and many more. It will also serve as a very good introduction during the Industrial Road Show. The videos will also be made available for use by the European Commission. This video could also be used for outreach to schools and for communicating the significance and achievements of the work to local and national politicians.



Figure 1 – YouTube video of the SEQUENCE consortium: The coolest hot topic of our age

3.2 Social Media

We will engage social media to deliver to the widest audience a simplified and attractive message on the benefits of EU-funded research. Some of the partners (IBM, T-UCC, IAF) already have in place an active policy to advertise the activities of researchers through direct links to social media platforms (Facebook, LinkedIn, Twitter, Flickr, YouTube, and blogging platforms).

3.3 Outreach events

SEQUENCE members will actively participate in outreach events targeted towards students and secondary school students. IBM is very active in reaching out in different ways to high school students to attract them to science and technology (e.g. "Science week", researcher visits at high schools, "Swiss Tech Day", etc.). IBM also regularly hosts University student groups for presentations and lab visits. Every year in February T-UCC hosts Transition Year students (typically 16-17 year olds) for one week. T-UCC also contributes to the Discovery Science Festival in Cork, and now hosts undergraduate students from the field of Digital and Creative Media to develop outreach videos as well as information graphics to communicate scientific results. GLA regularly contribute to UK national science festivals to disseminate the outputs of their work to the general public. IAF has a YouTube Channel and is active in other social media as well. The IAF has a public relations department which supports press releases and social media, exhibitions and internal communication within Fraunhofer and their alliances, but also marketing of key products and research results. ULUND every year hosts visiting High-School students interested in Science and Technology (Gemstone project, NMT days and Her Tech Future). ULUND also plan to participate in "Culture night", a science/culture outreach event for the general public.

On 2020-06-23, we organized a tutorial - webinar on quantum technologies with two distinguished external invited speakers: Andreas Fuhrer (IBM) and Maud Vinet (CEA-LETI).

3.4 Transfer knowledges in universities

Several members of the consortium are regular professors and lecturers at universities. Those channels will be used to communicate and raise awareness of the SEQUENCE technologies, transfer knowledge to advanced courses, and attract master and PhD students for research in this field.

4 Dissemination to Industry

The SEQUENCE consortium will attend appropriate Conferences/Exhibitions like the European Microwave Week to make contact with relevant industries. Stake holders with interests in Cryogenic electronics, space applications as well as future communication systems will be identified. SEQUENCE prepared a press release, which coincided with the web site launch.

SEQUENCE press release: <u>https://www.eurekalert.org/pub_releases/2020-09/lu-epa090420.php</u> SEQUENCE website: <u>http://www.sequence-h2020.eu/index.php?gpuid=4&L=1</u>

As planned initially, two dedicated workshops will be organized by the SEQUENCE consortium during the project to highlight the technology platform which is being developed by the SEQUENCE consortium and how it can be of benefit to European Industry. In particular, the workshops will emphasize the benefits of the SEQUENCE technology platform, which are:

- Cryogenic electronics for quantum computing
- Cryogenic electronics for high-performance computing
- Space communication and sensing
- Future communication systems.

The first workshop is planned to happen virtually during the IEEE conference the International Microwave Symposium (IMS) the 20th June 2021. IMS gathered around 650 exhibiting companies in 2019, and is considered one of the largest event dedicated to the radio frequency and microwave industry in the world. Furthermore, the invited presentations during the workshop include a talk from Google (*Joe Bardin*), a talk from Intel (*Stephano Pellerano*) and a talk from IBM (*Cesar Zota*), three major industrial actors in the quantum computing community. Additional details on this workshop will be given in the "Dissemination to scientific community" section of this document (see Table 5 for instance).

The second workshop will be organized during a major European conference (ESSCIRC / ESSDERC 2022 for instance), in the second half of the project. The majority of the speakers will be from European universities, institutions and companies.

The SEQUENCE consortium will also attend brokerage events organized within the framework of EU Ecsel projects (https://www.ecsel.eu). In addition, we will have a strong effort during the project to continuously refine and strengthen the dissemination of SEQUENCE and its outcomes to the industry, this includes defining a plan for beyond the project. One key strategy will be our Industrial Road-show that is used as a two-way communication strategy with both dissemination of and collection of input to the consortia. This industrial roadshow will gather microelectronic companies such as SOITEC, STMicroelectronics, AnalogDevices, Global Foundry, as well as cryogenic and quantum companies such as IBM, Atos, Air Liquide. We will use our network of industrial stake holders as well as the institutions and companies that are directly involved in the project (IBM, Fraunhofer, LETI). All those companies and institutions will play a key role during the industrial roadshow, as they will be invited to participate and share their perspective on the technology evolution.

5 Dissemination to the Scientific Community

For dissemination to the research community active in nanoelectronics, we utilize the traditional channel of publications and conferences. The SEQUENCE project will also align with efforts within the EU Quantum Flagship to run a winter/summer school during the course of the project, with contributions from all project partners. The SEQUENCE consortium will establish links with other public funded European, US or Asian (Japan or Korea) consortia. The consortium intends to arrange an International Workshop on cryogenic electronics. Finally, we plan to contribute to the IRDS roadmaps to define the processes and performance of transistors for future technology nodes.

5.1 Publications and conferences

Results related to SEQUENCE are being published in leading journals and presented in leading conferences in the fields of nanoelectronics, solid-state physics and circuit design. Table 2 presents the initial publications target of SEQUENCE as well as the current publications statut (at M18).

Table 2 – Initial publications targets in journals and conferences and publications that have alreadybeen published by the consortium (M18)

Publications	Targeted	M18
IEEE EDL/TED	8	4
Nature Elec.	3	1
Nano Letters	2	1
APL/JAP	2	3
IEEE JSSC/TMTT	2	4
Journal Low temperarure physics / cryogenics	2	1
Solid State Electronics	2	2
Other journals	0	2
IEDM	5	1
VLSI	1	0
ISCS/IPRM	2	2
WOLTE	1	1
ESSDERC/DRC	6	0
INFOS/EMRS	1	0
EUROSOI-ULIS	2	2
IMS	2	1
Book	0	1

Details of each publication (title, main author, type, and venue are given in Table 3.

Table 3 – Details of the publications that have already been published (M18). Colors indicate the type of publication: conferences proceedings, journals, letters, and books.

Publication title	Author(s)	Journal/Conf.
		Semiconductor Sci-
Simulation of low-noise amplifier with quantized ballistic nanowire channel	Christian Marty et al.	ence and Technology
Evidence of 2D Intersubband Scattering in Thin Film Fully Depleted Silicon-On-		
Insulator Transistors Operating at 4.2K	Mikaël Cassé et al.	APL
Design of III-V Vertical Nanowire MOSFETs for Near-Unilateral Millimeter-Wave		European Microwave
Operation	Stefan Andric et al.	Week 2020
Unbrid ULV tunnel FFT and MOSEFT technology platform integrated on cilicon	Clarissa Convertino	Natura Flastranias
Hybrid III-V turiner FET and MOSFET technology platform integrated on sincon	et di.	
Mobility of near surface InGaAs quantum wells	al	ΔΡΙ
Ultra Low Power Scaled III V on Si 1T DRAMe With Quantum Well Heterostructures	C Convertino et al	
Poisson-Schrodinger simulation of inversion charge in EDSOL MOSEET down to		
0K – Towards compact modeling for cryo CMOS application	M. Aouad et al.	EuroSOI-ULIS 2020
Vertical InAs/InGaAsSb/GaSb Nanowire Tunnel FETs on Si with Drain Field-Plate	Abinava Krishnaraia	
and EOT = 1 nm Achieving Smin = 32 mV/dec and gm/ID = 100 V-1	et al.	SNW
The Role of Oxide Traps Aligned with the Semiconductor Energy Gap in MOS		
Systems	Enrico Caruso et al.	TED
Performance and Low Frequency Noise of 22nm FDSOI down to 4.2K for Cryo-	Bruna Cardoso Paz et	TED
genic Applications	al.	
Cryogenic Operation of Thin Film FDSOI NMOS Transistors: Effect of Back Bias	M Cassé et al	TED
on Drain Current and Transconductance		
InGaAs MOSHEMT W-Band LNAs on Silicon and Gallium Arsenide Substrates	Fabian Thome et al.	MWCL
Tuning of Source Material for InAs/InGaAsSb/GaSb Application-Specific Vertical	Abinaya Krishnaraja	ACS Appl. Electron.
Nanowire Tunnel FETs	et al.	Mater.
Cryo-CMOS Compact Modeling	C. Enz et al.	IEDM 2020
On the diffusion current in a MOSFET operated down to deep cryogenic tem-	Gerard Ghibaudo et	Solid State Electro-
peratures	al.	nics
Millimeter-Wave Vertical III-V Nanowire MOSFET Device-To-Circuit Co-Design	Stefan Andrić et al.	Transactions on Na-
III V Nanowire MOSEETc: RE Proportios and Applications	Lars Frik Marparsson	notechnology
First Demonstration of Distributed Amplifier MMICs With More Than 200 CHz	Eabian Thoma Ar	BUILTS
Prist Demonstration of Distributed Ampliner Minics with More Than 300-GHz Randwidth	radian mome, Ar-	JSSC
		Solid State Electro-
III-V-on-Si Transistor Technologies: Performance Boosters and Integration	D. Caimi et al.	nics
Heterogeneous Integration of III-V Materials by Direct Wafer Bonding for High-		11100
Performance Electronics and Optoelectronics	Daniele Caimi et al.	TED
Optimization of near-surface quantum well processing	P. Olausson et al.	Physica Status Solidi
Scaled III-V-on-Si Transistors for Low-Power Logic and Memory Applications	Daniele Caimi et al.	JAP
Low temperature behaviour of FD-SOI MOSFETs from micro- to nano-meter	F. Serra Di Santa Ma-	
channel lengths	ria et al.	WOLTE 21
Low temperature characterization and modelling of FDSOI transistors for cryo	M. Cassé and G. Ghi-	Low-Temperature
CMOS applications	baudo	Technologies (book)
A 50-nm Gate-Length Metamorphic HEMT Technology Optimized for Cryo-		
genic Ultra-Low-Noise Operation	Felix Heinz et al.	
A Scalable Small-Signal and Noise Model for High-Electron-Mobility Transis-		IEEE TMTT
tors Working Down to Cryogenic Temperatures	Felix Heinz et al.	



As shown in Figure 2, the initially targeted number of journals is already almost reach at M18 (18 published for a publication goal of 21). In the other hand, the number of presentations in conferences remains relatively far from the initial target (7 presentations for an initial goal of 20). This situation might be linked with the sanitary situation in Europe in 2020 and 2021.

Figure 2 – International workshop abstract





Figure 3 – Areas of the consortium publications

tions. There are few publications on cryogenic circuits for quantum computing. However, the number of publications in this field should increase during the second half of the project because some circuits have been designed and fabricated in the first half of the project and will soon return from the foundries in order to be tested.

Finally, SEQUENCE partners will write a joint article summarizing the SEQUENCE

views, visions and outcomes. This article could gather findings from the technical work packages (WP1, WP2, WP3 and WP4) and be published in a high-reputation journal such as Applied Physics Review (APR), IEEE Transactions on Electron Devices (TED), or IEEE Transactions on Quantum Engineering which is a recent open access journal focusing on Quantum Engineering research.

5.2 Winter/summer school

We will organize a Winter school in Winter 2022 (January-March 2022). We decided to organize a winter school over a summer school because of the reduced COVID-19 propagation during winter. Furthermore, a summer school taking place in summer 2022 would be too close to the end of the project (December 2022). The winter school will take place in French Alps. The location of the hotel as well as the practical organization is led by LETI, while the scientific organization of the winter school is led by EPFL.

The school will cover advanced topics in quantum computing and cryogenic devices, circuits and systems. It will be targeted at upper-level undergraduates and graduate students who have some prior knowledge of linear algebra, semiconductor physics, and quantum physics. This winter school will also be targeted at PhD candidates and researchers that work in closely-related fields and are interested in knowing more on quantum computing and cryogenic nanoelectronics.

Table 4 presents some possible places and hotels where the winter school could be organized, depending on the dates and on the price.

Table 4 – Dates and prices of hotels for the winter school. Prices go from low to high with the follow
ing color scale: green – light green – light blue – yellow – light orange - orange

Dates	Hotel	Resort	CM per Day with Lunc	h & Coffee breaks (25)	Night + Dinner (wine) + Breakfast (25 then 30)	School (Day) + Lunc	h + coffee breaks (30)	5 days Total	Total for 4 nights & 5
			Total	Per Person	Total	Per Person	Total	Per Person	1	days stay/ person
05/09 - 09/09 2022	Le Prieuré	Chamonix	1850€ / day (25)	74,00€	4037,50€ / night (25)	161,50€	2070€ / day (30)	69,00€	(50% at the order)	
			including the welcome							
			coffee		4845€ / night (30)	161.50€			29 712 €	1001€
07/03 - 11/03 2022	People Hostel	Les 2 Alpes	850€ / day (25)	34,00 €	3225€ / night (25)	129,00 €	960€ / day (30)	32,00 €	(50% at the order)	678 € (No Activity)
			including the welcome	,		,	,, (,	/	21 PCE 6 Justite	,,,,
			including the welcome		29705 / slabt (20)	120.00.6			21 003 € (With Activity)	739 6 Junith Activity
			Deem 3806/deu		2010£ / Hight (20)	125,00€			ACTIVITY	720 € (WILLI ACTIVITY)
			2 Coffee Breaks +							
			2 Conee breaks +			ACCC (A -labor all models)	D		A	010.0
			Lunch 15 x 25: 375€			165€ (4 nights all meals)	Room 380€/day		Amount at the order	910£
24/01 28/01 2022	Club manual	Are 2000	2 X 25: 575€/day	45.20.6		175€ (5 nights all meals)	2 corree breaks	27.67.6	10t defined 50%? 01	
24/01 - 28/01 2022	Club mmv	AFC 2000	Data and 2000 (Harri	45,20€		198€ (1 night all meals)	2 x 50: 450€/day	27,67€	22 515€	
			2 Coffee Breaks +							
			2 Confee breaks +			170£ (4 pickts all moals)	Doom 2006/day		Amount at the order	000 0
			Lunch 15 x 25: 375€ 7 E x 2 x 2E: 27E€ /day			176€ (4 nights all meals)	2 Coffee Breek		amount at the order	000 %
24/01 28/01 2022	Club manu	Almos d'Iduca	7,5 X Z X Z 5. 575€/Udy	45 20 6		215€ (5 night all meals)	2 conee breaks	27.67.6	34 0076	
24/01 - 26/01 2022	Club minv	Alpes u Huez	Doom: 1006/dour	45,20 €		213€ (1 Hight all Hieals)	2 X 50. 450€/day	27,07 €	240076	
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07-03 - 11-03 2022	Ibiza Hotel	Les Z Alpes	Room 7506/day	31,00€		142,00 €	Room 900£/day	30,33 €	20 3846	
			2 Coffee Breaks +				2 Coffee Breaks + Lunch		10K6 at the order	
			2 COTTEE DIEdKS T				15 x 20: 4505		10Ke at the order	1 101 0
24/01 28:01	Terminal Naigo		Euricii 15 x 25. 575€		ECODE (sight (2E)		13 X 30. 430E		The rest at the hetel	1 181 €
24/01 - 28-01	Totom	Flains	6 x 2 x 25: 500€/day	57.00 C	6720E / night (25)	224.00.6	6 x 2 x 50: 500€ /day	F7 00 6	The rest at the noter	
24/01 - 28/01	Totem	Chamonia Los		57,00 €	6720€ / Hight (50)	224,00€	16506/day	57,00 €	200/ states suites of	
24/01 - 26/01	Deeley Dee	Unamonix Les	12756 / day	FE 00 6		115.00.6	1250€/udy	EE 00 6	30% at the order of	735€
07/02 - 11/02	коску гор	Chamonix Los	1575€7 day	55,00 €		115,00 €	1650€/day	55,00 C	20% at the order of	
14/03 - 18/03	Rocky Pop	Houches	1275£ / day	55.00 £		125.00 £	1350€/ balf day	55 00 £	20% at the order of	775€
29/08 - 02/09	NOCKY POP	Chamonix Les	1575E7 day	55,00 €		125,00 €	1650€/day	55,00 €	20% at the order of	
05/09 - 09/09	Rocky Rop	Houches	1275£ / day	55.00 f		115 00 £	1350€/ half day	55 00 £	10 2006	735€
03/03 - 03/03	Коску гор	Hodenes	1575€7 day	55,00 C		115,00 €	1550c/ Hall day	55,00 C	19 2000	
			Room 4006/day				Room 400E/day			
			2 Coffee Breaks +				2 Coffee Breaks + Lunch		25% at the Order of	
			Lunch 21 x 25: 525€				21 x 30- 630€		19984£	756€
29/08 - 02/09			7 50 x 2 x 25: 375€/day				7 50 x 2 x 30: 450€/day		155040	
23/00 02/03	Base Camp Lodge	Bourg-St Maurice	7,50 x 2 x 25. 575 c/ du y	52.00 £		126.00 £	7,50 X 2 X 50. 4500, day	50.00 £		
	base camp couge	bourg be maurice		52,00 0		120,00 0		50,00 0		
			Boom 400€/day				Room 400€/day			
			2 Coffee Breaks +				2 Coffee Breaks + Lunch		25% at the Order of	
			Lunch 21 x 25: 525€				21 x 30: 630€		21709€	776€
			7.50 x 2 x 25: 375€/day				7.50 x 2 x 30: 450€/day			
24/01 - 28/01 2022	Base Camp Lodge	Bourg-St Maurice	.,	52.00€		131.00€	.,	50.00€		
2 1/02 20/02 2022	comp couge	a sig se madrice	Room Free	52,000		151,000		50,00 0		
			Welcome coffee +			89€ (4 nights all meals)	Room Free		30% at the order of	
			coffee Break			80€ (3 nights all meals)	2 coffee Breaks		12965€	385€
31/01 - 04-02 2022	Azureva	Arêches-Beaufort	2 x 5 x 25 = 250€	10€		155€ (1 night all meals)	2 x 5 x 25 = 250€	10€		
14/03 - 18/03										
	Belle Plagne	La Plagne							36 382 €	1 250 €

5.3 International workshop

An international workshop titled "Cryogenic RF and mmW Technology and Circuit Platforms: A Path Toward Quantum-Computing" is organized during the conference IMS (International Microwave

	WORKSHOP TITLE	WORKSHOP ABSTRACT
WMC	Cryogenic RF and mmW Technology and Circuit Platforms: A Path Toward Quantum-Computing Sponsor: IMS; RFIC Organizers: Adrien Morel, CEA-LETI; Didier Belot, CEA-LETI; Michael Schroeter, TU Dresden	Cryogenic electronics will have a strong impact on our society through applications as Quantum Computing but also, space communica- tion, and high performance computing. Quantum computers, for instance, have the potential to radically advance our computational capability and are predicted to strongly impact fields such as medicine, chemistry, science and finance by allowing to solve computa- tional problems that cannot readily be solved by classical computers. The hardware implementations of quantum computers rely on various quantum bit (qubit) technologies, such as superconducting qubits, spin qubits and Majorana fermions. All of these Qubits require cryogenic temperatures (<4N) to operate efficiently, and need, and restitute Analog-RF signals for their manipulation, and results respectively. Thus, there is a need for cryogenic electronics with a large array of functionalities, operating under extremely low noise conditions with limited power budgets. Achieving this will require enhanced understanding of existing transistor technologies, 3D integrated systems and novel nanoelectronic devices employing unique low-temperature effects. With these new devices, new ultra-low noise, ultra-low power, and wide-band circuits and systems are emerging, preparing the next computing revolution. In this Workshop we will explore state of art status of Quantum computing applications and their associated technology and circuits analog-RF platforms.

Figure 4 – International workshop abstract

Symposium) 2021, the 20th June 2021. IMS is a major IEEE conference and one of the largest event dedicated to the radio frequency and microwave industry in the world (9500 attendees in 2019, 650 exhibiting companies in 2019). The workshop abstract is shown in Figure 4.

The workshop gathers nine talks from experts on qubit technology, devices at cryogenic temperatures and circuits for quantum computing. The planning of the workshop is shown in Table 5. The talks subjects are closely related to SEQUENCE workpackages on cryogenic devices and cryogenic circuits.

Table 5 – Workshop speakers and talks on qubit technolog	y, devices at cryogenic temperatures and
circuits for quantum con	nputing

Talks titles	Speakers
Spin Qubit Quantum Computing overview	Tristan Meunier,
	CNRS, France
Overview of high-frequency electronics for superconducting quantum com-	Cezar Zota, IBM, Swit-
puting	zerland
Cryogenic circuits and systems for Qubits readout	Mathilde Ouvrier-Buf-
	fer, CEA, France
Characterization and modelling of FDSOI devices for cryo CMOS applications	Francis Balestra, CNRS,
	France
Cryogenic behavior of InGaAs Nanowires for RF and mmW, and associated	Lars-Erik Wernersson,
circuits for Quantum computing and other cryogenic applications	U.Lund, Sweden
Cryogenic InGaAs mHEMT and MOSHEMT for RF and mmW and associated	Fabian Thome, Fraun-
circuits and systems for Quantum computing and other cryogenic applica-	hofer IAF, Germany
tions	
Horse Ridge: a Cryogenic SoC for Spin Qubit Control Implemented in Intel	Stefano Pellerano, In-
FinFET Technology to Enable Scalable Quantum Computers	tel, USA
Cryogenic SiGe HBT device operation for Quantum Computing	Michael Schröter, TU
	Dresden, Germany
Cryogenic SiGe Analog-RF circuits for Quantum Computing	Joe Bardin, U.Mass. &
	Google, USA

This international workshop is a good opportunity to present the consortium works and visions to the RF community and to international companies that might be interested in quantum computing.

5.4 Contributions to IRDS roadmaps

We will participate to the Quantum computing IRDS (cryogenic electronics and quantum information processing) CEQIP. IBM is already a member of CEQIP and will contribute to the IRDS roadmaps to define the processes and performance of transistors for future technology nodes.

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6 Dissemination planning



Figure 5 – Dissemination planning