Inauguration du premier superordinateur luxembourgeios MeluXina 07.06.2021

# Intervenants

* Josephine Wood, Senior Programme Officer, EuroHPC Joint Undertaking
* Xavier Bettel, Premier ministre, ministre d’État, ministre de la Digitalisation
* Franz Fayot, ministre de l’Économie
* Mario Grotz, President of the Board of Directors of LuxProvide
* Roberto Viola, Director General of DG Connect
* Anders Jensen, Executive Director of EuroHPC Joint Undertaking

# Langues

* Anglais
* Français

# Transcript

[Josephine Wood]

Votre Altesse Royale, Monsieur le Premier ministre, Monsieur le ministre de l'Économie, Mesdames et Messieurs.

Good afternoon. Welcome to Bissen in Luxembourg, the home of MeluXina, one of the most powerful European supercomputers to be launched to date in the European Union.

My name is Josephine Wood and I am the Senior Programme Officer at EuroHPC Joint Undertaking.

MeluXina is a joint venture between Luxembourg and the European Union. This venture has been managed by LuxProvide which is the hosting entity responsible for the procurement, planning, installation and managing of MeluXina.

We at the EuroHPC Joint Undertaking are delighted that this day has come.

Our mission is to build a European ecosystem of high performance computing, and thus ensure that Europe becomes a global leader in supercomputing.

The headquarters of our Joint Undertaking is located right here in Luxembourg.

We work with European participating States, the private sector to invest in European and national funds in research, innovation and deployment of these very fast supercomputers.

We are delighted to work in partnership with the Luxembourg Government and LuxProvide on this very ambitious joint procurement.

Today you will hear all about this fantastic achievement.

Je suis ravie de donner la parole au premier orateur, Monsieur le Premier ministre, Xavier Bettel.

Merci.

[Xavier Bettel]

Altesse Royale, cher collègue Monsieur Fayot, Monsieur le bourgmestre, chers représentants de la Commission européenne d'EuroHPC, Mesdames, Messieurs.

À tout d'abord, je tiens à remercier de nous recevoir chez eux aujourd'hui pour pouvoir aujourd'hui lancer le supercalculateur luxembourgeois.

Pour beaucoup d'entre nous, cela signifie l'atteinte d'un objectif, en fait, l'accomplissement d'une tâche qu'on s'était tous donnée.

Pour l'équipe de LuxProvide, pour le ministère de l'Économie et ses fonctionnaires ainsi que pour le ministère d'État.

Je tiens à vous remercier tous car c'est un travail de trois ans maintenant déjà qui a était débuté et qui aujourd'hui atteint son lancement officiel, donc mission accomplie.

En fait, c'est maintenant en fait que l'aventure commence. MeluXina va commencer à nager, MeluXina va commencer à se lancer.

Il s'agit en fait d'une machine extraordinaire et un des calculateurs les super performants, parmi les meilleurs non seulement en Europe, mais aussi au monde.

Et nous avons appris la semaine dernière que la barre de dix pétaflops par seconde pour MeluXina a pu être franchie.

Alors bien sûr, on a préparé un discours, mais comme vous tous, je me suis demandé ce que c'était les pétaflops.

Je sais pas si tu as prévu de le développer dans ton discours car je vous rappelle, lors de la conférence de presse, nous parlions du nombre de milliards de millions que tout cela représente. Mais ce sonst des choses qui sont inimaginables, mais qui sont faits et qui existent aujourd'hui. Nous sommes convaincus en fait que grâce à ce super calculateur en fait l'innovation permettra d'être encore plus encouragée au niveau de l'Union européenne et dans un secteur qui est hautement globalisé et surtout qui doit être très compétitif.

Et nous sommes témoins tous que la compétitivité existe et que nous avons des défis sur la même planète, que nous partageons cette même planète.

Nous avons des défis, que ce soit dans un monde global, que ce soit des problèmes qui soient globaux et je vois derrière un globe vert avec les problèmes d'environnement. Et Monseigneur, permettez-moi de vous remercier aussi pour votre présence aujourd'hui qui montre aussi le lien de la famille grand-ducale au développement économique du Grand-Duché de Luxembourg, mais aussi la présence de l'innovation, de la digitalisation et du respect quant à l'environnement et je sais combien, Monseigneur, ce sujet vous tient à coeur et je vous remercie aussi pour le rehaussement de l'engagement du Grand-Duché que vous faites avec votre présence au niveau des différentes organisations internationales et l'engagement que vous avez qui donne aussi au gouvernement encore une note supérieure par votre engagement aussi personnel. Donc aujourd'hui ce projet MeluXina est un projet qui est... un rôle très important dans le domaine de la recherche mais aussi, et qu'une partie majeure des capacités est destinée aussi à l'innovation scientifique.

Et ce qu'était juste hier, on le sait très bien, sera quelque chose d'autre demain et aujourd'hui, ce projet fait partie justement du futur.

Et le Luxembourg a toujours été, et Monsieur le ministre de l'Économie, je prends l'exemple de la sidérurgie. On extrait quelque chose qui était la richesse de ce pays.

Aujourd'hui, nous faisons de l'extraction dans l'espace. D'une place financière qui était une place financière différente hier que celle qu'on a aujourd'hui qui sera différente de celle de demain, de celle de l'innovation, de savoir se réinventer. Et ça était la force de ce Grand-Duché de Luxembourg, de toujours oser, être pionnier, investir et vouloir en fait avoir la confiance aussi pour... de la part de ses partenaires étrangers.

Et donc, permettez-moi de le dire, même si aujourd'hui, nous célébrons un moment tellement important, ce n'est pas une révolution, sans vouloir réduire ce que l'on fait. Mais c'est une suite logique dans le développement économique de ce pays qui a toujours été celle d'être pionnier, celle de vouloir avancer, celle de vouloir... c'est vrai que sur la carte, on a du mal à nous trouver... ce grand globe, mais au niveau économique, au point de vue recherche, au point de vue innovation, au point de vue dynamique de tout ce que l'on fait, de tout ce que l'on veut mettre sur pied, je sais que le Grand-Duché de Luxembourg est beaucoup plus grand aussi que ce qu'il représente sur une carte.

Et puis, permettez-moi justement pourquoi d'insister sur ce projet quand je dis qu'il est pionnier. Car, je vous ai dit, on est fier de notre passé.

On est fier du présent, on est fier de ce que l'on vit, mais ce qui est très important, c'est de surtout de pouvoir préparer aussi le futur si on veut, dans l'avenir aussi, pouvoir être fier du présent ou de son histoire. Et ici, ce projet fait partie de l'après-crise aussi. Nous vivons un moment très dur, tous, tous.

Et personne ne doit se plaindre car nous vivons tous, à tout degré de niveau, que ce soit au niveau politique, au niveau administratif, au niveau chef des entreprises, pour tout le monde, niveau père de famille, mère de famille... tout le monde vit une situatioun très délicate. Mais il faut penser aussi à l'après-crise.

Il faut penser à la sortie de la crise et cet instrument ici fait partie justement de ces projets du futur et qui sont aussi symboliques pour montrer qu'on est prêt justement pour cet avenir. Et dans son programme de soutien à la relance justement, l'Union européenne a mis en exact deux points.

Un la digitalisation et deux la transition écologique et ici, vous l'avez sur ce site: la preuve de pouvoir aligner les deux.

Écologie et économie ne sont pas ennemis. Nous sommes convaincus que écologie et économie sont liées et que de rater le coche de l'écologie aura des répercussions économiques qui sont très graves, et de rater le coche de l'économie aura des répercussions sur l'écologie qui ne seront pas meilleurs.

Donc, autant joindre les deux et je tiens à remercier tous les promotteurs de ce projet qui aujourd'hui montrent que écologie et économie font bon ménage.

Merci beaucoup.

[Josephine Wood]

Merci Monsieur le Premier ministre. I'd like now to give the floor to Minister Fayot, Minister of Economy of Luxembourg.

[Franz Fayot]

Royal Highness, Mister Prime Minister, dear Xavier, Deputy Director Kalbe, dear Anders Jensen, dear David, mayor of Bissen, Ladies and Gentlemen.

Five years ago, Luxembourg was part of a group of four countries, together with France, Italy and Spain, launching an important project of common European interest. An (?) to set up a network of European supercomputers.

We understood at the time that if we want to close the gap between Europe and other regions in the world in the race for competitive data economy, we needed a network of European supercomputers. The achievement today of launching MeluXina is an important milestone in this race towards a more digital competitive Europe. But the process of digitizing Europe is still ongoing and is more relevant now today than ever. And Prime Minister Bettel said it; we are in a post COVID-19 time and digitalization is one of the axes of relaunching Europe post COVID.

Today the goal to build a digital Europe materializes in initiatives around the European Cloud GAIA-X to which Luxembourg also participates, around cybersecurity, the proposed regulation of artificial intelligence but also in the Digital Services Act and Digital Markets Act. We have recognized that Europe, the European Union must have a digital sovereignty and we are working towards that end. With MeluXina, we are today here in Luxembourg, making an important step towards a more digital Europe.

In Luxembourg, Meluxina is yet another essential step to ensure that public and private actors have access to the most competitive digital enabling infrastructure.

While most HPCs in the world are focused on academic research, Luxembourg has chosen that its HPC should also meet specific business needs and that is what makes it so special. Whether you are a multinational company, whether you are an institutional startup or an SME discovering the economic potential of the data economy, our goal is to make supercomputing accessible to all.

In a mapping of the potential market, about 750 public and private entities have been identified as potential users of which about 20% can be considered as high potential users. The users that were identified are active in all of the priority sectors that are relevant to the country, be it industry, telecommunications, finance, health, education, construction, logistics, or trade.

Also, and Prime Minister Bettel alluded to it, MeluXina will be a green supercomputer.

It is expected to be ranked in the top 20 of the most energy efficient supercomputers worldwide.

We are indeed aligning digital and environmental responsibility. But of course it is not enough to just set up a supercomputer such as MeluXina and expect everyone to be able to use it like a new MacBook or a new PC that has just been bought. No, you also have to educate and train the users.

And therefore, one of the major components of the ecosystem surrounding MeluXina will be the HPC national competence center.

This one-stop shop for high performance computing and data analytics provides operational support and training to potential users.

Another part of the ecosystem will be funding instruments managed by the Ministry of Economy that can be applied for to support HPC projects.

All in all, MeluXina and its surrounding ecosystem is yet another brick to consolidate Luxembourg's ambition as a digital European frontrunner.

The future is data-driven. Through providing computing power to industry, I am convinced that we will help businesses to have the right tools in order to seize the opportunities of the 21st century data economy. Ladies and Gentlemen, I would also like to say a few words about the communality of Bissen which hosts LuxProvide and MeluXina. Bissen, its mayor, but also its alderwomen and men and also its communal council are representing the type of communality which puts Luxembourg on the European map with innovative and cutting-edge technology. Sometimes against some public opinions which are not always favorable to all of this, so with kind of a lot of heads against them but still they are doing it and what has been realized here over the past years and what is still being planned is truly impressive and I would therefore like to thank you and the entire communality of Bissen and also the community of Bissen for being an excellent partner in this journey to a more digital economy.

We are in a few minutes going to launch Luxembourg's first supercomputer which will be officially launched by our Head of State Grand Duke Henri who will press this red button. Through this symbolic act we put Luxembourg on the global map of computer superpowers.

The launch of MeluXina reflects more than five years of intensive work from my dedicated team at the Ministry of Economy and I would like to thank each one of them for what has been achieved. Today, we are proud and honored that Luxembourg contributed over the past six years to pave the way for future developments in European supercomputing. With MeluXina, we offer to the European union a uniquely differentiated HPC center and testbed facility for the rapid advancement of Luxembourg and European HPC and digital ambitions.

The EuroHPC and MeluXina partnership is the culmination of those shared ambitions between Luxembourg and the EU Commission.

Thank you very much.

[Josephine Wood]

Thank you very much, Minister. I would now like to give the floor to Mario Grotz, President of the Board of Directors of LuxProvide.

[Mario Grotz]

Royal Highness, dear Prime Minister Bettel, dear Minister of the Economy Fayot, dear guests. It is a great honor and pleasure to welcome all of you to the new premises of LuxProvide here in Bissen.

Today's inauguration marks an important step for the company in fulfilling its mission to provide computational power to companies, to the research community and to the public sector. MeluXina is fully operational today. We are ready to serve our customers.

The decision of the governement to entrust the operation of the supercomputer to a private company was not only particularly ambitious but above all visionary. In fact, to the best of my knowledge, the business model of LuxProvide is unique in Europe if not worldwide.

This unique positioning of MeluXina is reflected in several distinguishing factors:

Firstly, MeluXina is a world-class supercomputer infrastructure based on an innovative modular system architecture. The target performance for MeluXina is 10 petaflops. The innovative modular architecture allows to serve a large variety of complex, computational workloads. It is capable of addressing compute-intensive modelling and simulation applications as well as complex high performance data analytics and artificial intelligence workflows. With the current step, MeluXina can in fact serve all types of user groups across the full range of the research and innovation spectrum from fundamental scientific research, applied research, development and innovation to commercial use.

Secondly, MeluXina is the first HPC center focusing on industry needs. While most of the HPCs in the world are purely research oriented, Luxembourg has chosen to design its HPC to also meet the economic needs. With the investment in MeluXina, LuxProvide is positioning itself as a frontrunner in Europe for industry-centric HPC by aiming essentially at the country's and at the Greater Region’s economic fabric, including industry, SMEs and startups. The overall objective is to democratize and to broaden use of HPC for public research, for industrial innovation and for startups.

Thirdly, MeluXina offers tailor-made HPC, High Performance Big Data Analytics & Artificial Intelligence solutions. LuxProvide offers services that go far beyond the provisioning of computing and storage time. Everything is done to help the users to progress in mastering the machine through training and advanced support. In terms of recruiting, we attach great importance to engineering profiles with high-level expertise that master the customer's vocabulary. LuxProvide's solution engineers can help the client port their applications to MeluXina and take full advantage of the supercomputer. A special focus is put on artificial intelligence expertise.

Forthly, MeluXina is built on trust and reliability. Trust, good governance and clear contractual agreements are becoming increasingly important in the HPC environment and will also be a key differentiator for MeluXina. Our objective is to accompany public and private partners through a relationship of trust for the implementation of efficient solutions based on supercomputing. MeluXina has been designed from the ground as a secure solution that guarantees confidentiality of the data processed. The highest level of security is also found in the Tier IV and ISO certified data centre, in the communication and data storage system, and in the system and application management tools.

Fifth, MeluXina is fully integrated in the European and national HPC and data ecosystem. MeluXina is linked to a network of supercomputers and centers of excellence over Europe. Being part of this consortium allows LuxProvide to tap into a huge pool of computational and human resources.

Furthermore, MeluXina's unique architecture bridges the gap between public and private clouds and HPC and is therefore already prepared for the arrival of sovereign clouds such as GAIA-X. The full potential of MeluXina can only be realized by interacting and partnering with complementary data initiatives such as data exchange platforms or cloud solutions.

These collaborations will make our ecosystem more efficient and more attractive for research players, companies and the public sector.

Royal Highness, dear ministers, dear guests, to test the market, LuxProvide has recently launch a call for early and free of charge access to MeluXina.

With 38 applications submitted, the result of the call is very promising and also seems to confirm the business model.

Applications are very heterogeneous ranging from traditional HPC, so from modelling and simulation, to big data use cases.

All types of users from academia to industry, from large companies to SMEs have participated in the call.

We are now very excited to see the machine up and running. With today's inauguration a new stage in the development of MeluXina starts.

I can assure you that all the staff of LuxProvide and all my colleagues on the board are highly motivated to make this project a success and to anchor HPC as a cornerstone in our data ecosystem.

Thank you for your attention.

[Josephine Wood]

Thank you, Monsieur Grotz. Ladies and Gentlemen, le moment est venu pour inaugurer MeluXina.

Votre Altesse Royale, je voudrais vous inviter à prendre place içi sur le podium, ainsi que Monsieur le Premier ministre Xavier Bettel, Monsieur le ministre Franz Fayot, and Mister Jensen, Executive Director of EuroHPC.

Le geste inaugural consiste à appuyer sur ce gros buzzer rouge. Une fois que MeluXina est inauguré, nous allons regarder une vidéo de lancement.

[Présentation Vidéo]

10, 9, 8, 7, 6, 5, 4, 3, 2, 1

[Josephine Wood]

Congratulations, I am delighted to confirm that MeluXina is now inaugurated and online.

I would now like to ask Roberto Viola, Director General of DG Connect, to join us. Without his vision and drive, this day will not be possible.

Mister Viola joins us from Brussels. Dear Mister Viola, dear Roberto, welcome and over to you.

[Roberto Viola]

Thank you. Your Royal Highness, Prime Minister, Minister, Ladies and Gentlemen. It's really a great day today.

It's a day of a journey which is five years long and many many years in the future. It's a great day for Luxembourg, it's a great day for Europe and allow me to say, it's a great day for me and my team. The story is long, it was remembered, I mean it started five years ago, thanks to the intuition of a great Luxembourg team made of great Europeans to start to think about putting things together in a common project. And they came to me and to my friend Mario Grotz.

So I said, Mario, why don't we do do more together, why don't we combine your intention as Member States with the intention of the Commission to do something big and we join forces, we create an institution.

And there was a lot of enthusiasm that lead to the declaration that was signed in Rome of seven Member States wishing to work together, joined by the Commission and then the commission presenting a legal proposal to establish EuroHPC.

And when writing the proposal, I said, look I mean normally these kind of bodies are in Brussels but my team is in Luxembourg, the idea comes from Luxembourg, the joint undertaking must be Luxembourg.

And I went to the team of the president, President Juncker, and they said, look this is a great idea, the president is behind but really you should present it because otherwise it seems too much of a Luxembourgish setup.

And I said, yes with a lot of pleasure. We presented as a proposal to the Member States and it was approved.

So I remember when it was approved. It was a very rainy night. I went into the office of Mario Grotz with two bottles of Luxembourgish champagne, say Mario, this is a great day but let's make it greater, let's think about a supercomputer in Luxembourg. He told me this is another crazy idea which we can do but can you help?

And I said yes of course we will help. And then I mean all of this started I mean with the great determination from the Luxembourg team which is excellent, clearly an excellence in Europe and outside Europe and also allow me to say, my team in Luxembourg which is devoted to the course of digitizing Europe but I mean with the touch that comes from Luxembourg.

I said that this is a point of arrival but it's a point of departure. Already you heard the many applications that were MeluXina, including I mean this at the ambition programs we have about creating the twin of the Earth which means basically having our planet Earth under control like a spaceship and making sure that we can anticipate extreme event, extreme weather.

We can actually plan better how to preserve our planet. We want also to create the digital copy of our body to understand better how it works, the immune system, how to repurpose drugs in the future.

We have been using supercomputing a lot during the corona crisis and we have just seen the beginning of it.

And of course we want now with the approval of the new EuroHPC regulation 8 billion of investment in the largest computer on the planet.

The road towards a quantum computer. We want to do more together and also we want to partner with Luxembourg in realizing the first ever quantum infrastructure when it comes to telecommunication.

So the journey is a point of arrival but also it's a point of beginning and really we look forward to join you as partners for this great journey for Europe and Luxembourg. Many thanks for your attention.

[Josephine Wood]

Thank you. And last but not least I have the great pleasure to give the floor to my boss, Anders Jensen, Executive Director of EuroHPC Joint Undertaking.

[Anders Jensen]

Thank you. Your Royal Highness, Prime Minister, Minister, Ladies and Gentlemen.

I'm delighted that this day has come. When the European High-Performance Computing Joint Undertaking became autonomous in September 2020, I had the honour to sign a number of contracts to procure supercomputers for Europe.

The MeluXina contract was one of them. However, amongst the seven contracts, MeluXina is special.

Not only is the MeluXina contract the very first procurement contract I signed on behalf the European Union but as the headquarters of EuroHPC Joint Undertaking is also located here in Luxembourg, MeluXina is particularly close to my heart but also particularly close to the heart of my team. The fact that Luxembourg is hosting both EuroHPC offices, as well as MeluXina, is a testimony to the importance and value that Luxembourg has placed on high-performance computing in Europe.

Since the initial EuroHPC declaration was signed in Rome, it's been amazing to see the speed at which the European Commission and EU Member States have been able to create a unique joint undertaking with a very innovative and ground-breaking mission: to build one of the largest HPC infrastructures in the world right here in Europe.

MeluXina is a very important milestone towards us meeting our common objective of building a world-class HPC ecosystem in Europe.

I am extremely happy to see that just 8 months after contract signature, our jointly-procured supercomputer is now online and operational.

As you've already heard today, MeluXina is truly a remarkable piece of technology and it will significantly increase the computing power currently available in Europe.

It will provide HPC services to a wide range of users, both in Luxembourg and in Europe.

It will support the development of leading scientific research, support public sector and industrial applications in many domains and will help further the EU’s knowledge base in science, technology, machine learning, artificial intelligence, and high-performance data analytics.

MeluXina joins Vega, another petascale supercomputer located in Slovenia, as the first EuroHPC machines to become operational.

A further five supercomputers are underway, in Bulgaria, Czech Republic, Finland, Italy, and Portugal.

When all seven EuroHPC supercomputers are online, we can expect 670 petaflops of computing power to be available for European research and innovation.

This is an incredible achievement in such a short time – and it's just the beginning.

The new regulation for the EuroHPC Joint Undertaking will further increase the overall computing power significantly with the procurement of both mid-range supercomputers and exascale computers, as well as quantum computers.

I wish MeluXina and the team who will be working with her at LuxProvide every success for the future.

My team and I have really enjoyed our collaboration so far and we look forward to continue working closely together for the years to come.

Finally, I want to thank the Luxembourg Government, LuxProvide and its team, the European Commission, the vendor Atos, as well as my own staff who's all been instrumental in this significant achievement. Thank you very much.

[Josephine Wood]

Thank you, Anders. Maintenant, je vais clôturer cette cérémonie en remerciant tous les orateurs.

I also want to thank all the colleagues from Luxembourg Government, LuxProvide, the European Commission and the Joint Undertaking who made today possible.

Bon après-midi à tous et à toutes et merci à ceux qui nous écoutent dans le monde hors de cette pièce.

Bon après-midi.