

Transcript of Conclusions,
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“Ok, this of course makes it rather formal to speak from the podium, but perhaps this is good as the final intervention here. I have to say, summarizing what we have heard today is not so terribly easy, because what we heard this morning in some respect was very different from what we heard this afternoon. What we heard this morning was the many difficulties that young people experience in actually making their way into the space business. And what we heard this afternoon was the difficulties the space business finds in actually attracting the right type of workforce.

So it would look as though there is a difference of opinion, but perhaps it is not a difference of opinion, perhaps this is a reconcilable reality, as somebody mentioned, that there was a degree of mismatch between the background of the students and the requirements of industry. So there is something to reflect on there here, whether we should assume that the market will take care of this mismatch. But that sort of mismatch can of course explain the difference of perspective between industry and the youth in this. There might be another explanation as well which might be that with the youth, when they are right at the edge of getting into professional life, there is an impatience and there is a fear that ultimately you are not going to find exactly what you want. So there is perhaps a reason for society to look at how we can actually facilitate that move, and make it even more attractive, so that the young will not only dream about space but practice space.

I think it is true to say that space needs youth but also that youth needs space. Space needs youth not only as workers but as consumers of what space is ultimately providing. We are so dependent on space, as senator Tilmans said, ‘it is everywhere’. And we need to engage youth in making sure that we optimise our use of the space infrastructure that the youth is also building. But also youth must to understand that it needs space, that there is an opportunity for them to influence what ultimately the space society is providing to them - what the space infrastructure is going to be for the future.

Jean Jacques Dordain said “space must attract the youth”, which is certainly true. But it is also true that the youth must attract space. So it is not a one-way street of making space attractive to youth but it is also a question for the youth to have an assertive voice of what it expects from space, what it needs from space, and what it needs to make their way in space. And I have to say I think we can be very grateful to the Belgium Presidency that we had an opportunity this morning to hear the *version originale* of the voice of the youth. Because the space community talks a lot about youth, this is true and this is good, and we are looking a lot at what we can do in order to inspire, etc etc. But it is very good also to hear about the youth from the youth itself, to hear from them themselves without

organizational overlay and so on, where are the anxieties, where are the wishes and dreams. So in conclusion, I believe that what we have heard today is that there is a duty on the space community, but there is also a duty on the youth.

And I was very encouraged to hear this morning how our colleague from the Polytechnique was saying that when the Polytechnique did not actually offer something that they needed in terms of being engaged in space, then they created it themselves. This is, I think, really entrepreneurship which we should encourage, we should make it easy but we should also make it possible for the youth to actually create its own boundary conditions. I also thought it was very encouraging to hear about the three missions that have a large young element: Vega, the Estonian cubesat and proba v. I think we must celebrate the projects where we really see that the youth is strongly involved, and there are of course many more. As you might know I live in Austria so I also celebrate UniBRITE and the small satellites done in Austria. We have an awful lot of university projects around cubesats and small satellites and this is of course very good because what we heard from the authoritative voice of the youth this morning is that they really want the hands-on aspects as well; to feel that what they are learning, what they can bring, can be translated into something of practical relevance.

But I think I took from this morning ultimately that what we as a community should look at is that we have two valleys of death; you have the valley of death going from the dreams of your childhood to seek actually the related professional qualifications and you have the valley of death going from getting the professional qualifications to get a satisfying career in space. So what can we do about this? Well, what we heard was that things like cubesats and hands on experience are very important to make you move from secondary school to university to become a real space professional. We heard how important it is for us to pass on the flame and to explain what the flame is and that is true also for the youth that is already engaged. The 12 persons we heard this morning should also explain to their fellow students how engaging and how inspiring space is.

What can we do about the second valley of death? What can we do about the move from having the professional qualification to a satisfying career? I think we heard a lot about traineeships, we heard a lot about young graduate training schemes, and I thought that it was clear that this is an essential step to make that transition in a good way; to have the possibilities of being engaged practically in the companies and also show the companies what the youth can, what an individual professional who is young can actually bring. So this idea for instance that ESA has a 'YGT to Industry' program where you both see the institutional side and industry, is, I think, something we should take note of and we should be happy about. But we should perhaps also reflect on whether there are not more possibilities of providing mentoring. We have an awful lot of senior talent in Europe, retired space professionals, who might be able and willing to help in easing the way from university to a satisfying career and I am not sure that in Europe we are so good at activating that volunteer readiness to assist, in what is, in the end, still a difficult transition.

Then we heard a lot about how the industry must interface in a perhaps different fashion and more effective fashion with the university community and, I think, there is a lot to reflect on in this. I think that the boundaries between industry and universities must become far less rigid, that there must be far more interaction between these players. It is clear that the youth needs industry, it is also clear, as we heard this afternoon, that industry needs the youth. And really, again, there is a question of

ultimately how we pass on the flame. There is certainly an obligation also for us who are established in the space sector to make sure that we pass on the flame.

So what can industry do? Perhaps, more traineeships, perhaps longer traineeships, perhaps we can have a sort of European quality stamp for education, perhaps we can expand the Erasmus program to cover industry as well. There are many interesting ideas and I think that we must reflect on all of these ideas because it is the practical scope that is ultimately of relevance here. Perhaps we can also, as was discussed, talk about a platform where industry and universities interact better. But if you start to look at interaction between industry and universities then I think in Europe there are many unexplored avenues and I think perhaps we should sometimes look to Silicon Valley to see how a university like Stanford is interacting with the rest of the Silicon Valley community. And I think we do not have enough professors engaged in industry and not enough industry engaged in the university.

So what other steps can we think about practically? We heard about how taxation can be useful in guiding hiring, and so on. And I think this is something we must think very carefully about. And I think to complete this, that we must ultimately, all of us, look at what is attracting the youth to space. And I like very much what was said by Olivier, I think, that surveys are showing that the possibilities of making a difference, to meet challenges is what this is about, and this is something that we must convey. So it is not just a question of the dream of being an astronaut, it is a question of how we tap the potential of inspiration of space in so many different ways: from the perspectives of Earth observation, oftelecommunication, what sort of challenges are we providing, what sort of responsibilities, and if we do this well, the youth will have no problem and the space industry will have no problem.

Thank you.”