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Fiscal Year 2010 Budget Rollout

"Aeronautics Research Mission Directorate
Budget Briefing"

Speaker:

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Moderated by **BETH DICKEY**,
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P R O C E E D I N G S

MODERATOR: Good morning, everybody. This is Beth Dickey with NASA Headquarters Public Affairs. Thank you for joining us for our Aeronautics Research Mission Directorate telecon. With us is the Associate Administrator for Aeronautics Research, Jaiwon Shin, who will make some short opening remarks, and then we will take questions from the news media.

Jaiwon?

DR. SHIN: Yes. Good morning. Thanks for joining this telecon this morning. We appreciate your time.

The fiscal year 2010 budget for Aeronautics represents some exciting times to come for NASA Aeronautics. We appreciate the Acting Administrator Chris Scolese's strong support for Aeronautics and also the administration's support for continued research in NASA Aeronautics.

We will be able to initiate, again, a very exciting program called Environmentally Responsible Aviation project, and this will address directly the promising technologies in air vehicles to mitigate the

environmental impact by air vehicles. So we believe this is very critical for the future viability of aviation for the nation, and this is the right time to start this initiative. So, again, we are very much appreciative of the strong support by the administration, and we are excited about that.

With that, I would like to open up for any questions you may have.

MODERATOR: All right. Thank you, Jaiwon.

We will open for questions and answers now from members of the news media only. To queue up for a question, please press Star/1 on your touchtone phone. Anyone with a question, Star/1 on your phone, members of the news media.

Our first question will be from Robert Coppinger, Flight International Magazine.

MEDIA QUESTIONER: Oh, hello. Reading through the budget, there appears to be some movement around the various programs, but, overall, the budget seems flat and in some areas appears to decline. What guarantee can you give that manning or staffing levels will still be what they are today in two or three years time?

DR. SHIN: Yes. I would characterize our budget as stable, rather than flat. The reason for that is we have established a very robust and technically rich fundamental research that addresses all the air traffic management challenges, safety challenges, and also bringing new capabilities of the air vehicles.

That has been our main research area or subject for the past three years, and with the stable budget that we have had for the past three years, we have been making a lot of technical progress. For the fundamental research that we are doing, the stability is much more important than ups and downs of the budget every year.

So, building upon that strong fundamental research that we have established and result in good researching results, this FY10 budget allows us, as I mentioned in the opening remarks, to start more integrated system-level research with the sustained level of funding increase starting in FY10 at about 60 to 65 -- actually 60- to 64-million-dollar level each year, going through 2013. An increase, again, a stable increase, will allow us to initiate the more integrated system-level research.

The first one will be focused on addressing

environmental impacts through air vehicle technologies, and this new project or activity will benefit from the results coming the stable fundamental research, and in turn, as we are learning more and better about how these promising technologies can work together, we will be able to inform the fundamental research base to bring even better and new capabilities.

So I think this budget, the important characteristic of this budget is stability and also the augmentation starting from FY10.

MODERATOR: Rob, do you have one follow-up, and then we will go to the next questioner?

MEDIA QUESTIONER: No. You can go to the next questioner.

MODERATOR: Okay. We will hear now from Graham Warwick, Aviation Week.

MEDIA QUESTIONER: Hi, there. Can I just -- sorry, I joined late because the queuing system wouldn't let me on, but can you just explain this Integrated Systems Research? What does it have to be to qualify as Integrated Systems Research?

Also, the initial programs that are listed were

all under the Subsonic Fixed Wing and Fundamental. So is there anything new, or have you just shifted it?

DR. SHIN: Okay. Thanks for the question.

As we have reformulated aeronautic investments back in 2006, with the stable budget that I mentioned, we have been really seeing tremendous progress in various technical areas and producing good results.

So our own observation calls for integrating some of these promising technologies and conduct system-level research in an environment that is relevant to the real life, and our own observation was supported by external recommendations as well. NASA Advisory Committee also recognized that building upon the strong foundation of fundamental research, we should do more in integrated system-level research.

Also, Congress recognized that as well. So, in their congressional language, they called for more system-level research in safety, next-gen, and environmental impact mitigation area.

So the first focus that we will have, as you mentioned, is in environmental impact mitigation area, and the idea here is from Subsonic Fixed Wing in Fundamental

Aeronautics Program. That is currently in fundamental research base or in development, as we call it.

Some of the technologies in combuster or airplane are completely renewed configuration, as you have been seeing the new configuration called a blended wing body, and some of these concepts and technologies are ready to graduate from Subsonic Fixed Wing project and to be tested, again, in an integrated fashion and see whether the intended benefit when they are combined at the system level can be realized.

So this Environmentally Responsible Aviation project under Integrated System Research Program that we are creating stress a specific technical objective to reduce fuel burn and also noise and emission simultaneously. So that is where that integration aspect comes in.

So, individually, these are all promising technologies, as an example, again, new configurations, low loss combuster technologies, materials, and the way we can manufacture the light composite materials in a new way and also land in a flow control to reduce stress. All these technologies individually show a lot of progress and

promises that, when they are combined, can really actually achieve a significant reduction, level of reduction in fuel burn, noise and emissions, again, simultaneously.

We are shooting 40, 50 percent of our fuel burn reductions, not interested in 5 percent or 10 percent. So that is the difference between current benefits to investment in Fundamental Aeronautics Program. This new activity will be maturing technologies and also exploring and testing these individual technologies in an integrated fashion in a much more relevant environment.

MODERATOR: Do you have a follow-up?

MEDIA QUESTIONER: Right, right. What I am trying to work out is, are there new demonstrations; therefore, that plan? Because the one that is mentioned in the budget document was already planned under Subsonic Fixed Wing. The wind tunnel tests for the HWB for noise, et cetera, were already planned under Subsonic Fixed Wing.

When you move that over to ISR or whatever it is called, are there additional demonstrations that are planned that were not planned under Subsonic Fixed Wing?

DR. SHIN: So, as we have been planning ISRP, in conjunction or coordination with SFW, we will streamline

SFW projects, and there will be some out-year planned activities that could be moving towards moving into the Environmentally Responsible Aviation project. We are working that. To the extent and actual individual activities, research activities in the out years, are not known as yet, our team is working, and for the next several months, we will go through a much refined planning process.

But, as you have pointed out, Graham, there will be some activities in the out year that we planned will go into ISRP.

MODERATOR: All right. Rob Coppinger has a follow-up now.

MEDIA QUESTIONER: Yes. Thanks.

I had actually a little bit more time to look at the figures. I was just looking at the fiscal year 2009 column with the American Recovery Act. $150 million, you saved.

With the movement of the absorption of various programs into Fundamental Aeronautics, it is not obvious to me how you are spending that $150 million. Can you talk about where you are focusing that spend and how much you think you will go to spend this year, this fiscal year?

DR. SHIN: Okay. If I understand the question correctly, you are interested in how we plan to spend $203.5-million augmentation in FY09, coming from two sources, one, $53.5 million from congressional appropriated augmentation and then $150 million from American Recovery Act. And I think you also wanted to know what the relationship between this spending plan and the activity that we have been talking about.

MEDIA QUESTIONER: Yes. Just summarized.

DR. SHIN: Okay. For FY09 augmentation, in a broad sense, I cannot give you all the details, certainly, because of lack of time that we can have, and at the same time, the spending plan is still being reviewed for approval by the Congress. So I would spare going through the details, but, in a broad sense, we are trying to accelerate progress in some key areas that we support next-gen vision working with FAA and JPDO.

So there are some areas that we can accelerate using this funding based on the current plan, and, also, last year, JPDO had gone through a fairly extensive analysis to identify major R&D gaps. There are two gaps JPDO identified. One is air-ground functional allocation,

and another one is validation and verification of complex systems. There are a few other R&D gaps, but those are the two JPDO suggested that NASA should take a lead on.

So we are serious about filling those gaps. So some of the funds from FY09 augmentation will be used to address, again, accelerating some key areas to support next-gen vision and also start addressing R&D gaps identified by JPDO.

Also, we are investing this augmentation to improve our research capabilities in both ground test facilities and flight assets, and we believe this is the right way to use stimulus money. That will create a lot of jobs, and, also, it will improve, again, for the future, our research capabilities and test capabilities.

Also, we are investing some money to enhance the fidelity of our current foundational research activities, whether it is fidelity of the technical depth or initiating some system studies to understand better the technical requirements and many different kinds of activities, but, again, broadly speaking, we can say we are also investing to expand and enhance fidelity of current foundational research activities.

Some of these activities will certainly relate back to the Environmentally Responsible Aviation activity that we will formally start in FY10. We are trying to build, intentionally, a close relationship and coordination between fundamental research in this new integrated system-level research. Otherwise, those will be two stovepipes, two separate silos, and that is not the right way to conduct the research.

So we are intentionally trying to relate this very closely with a separate identity but coordinating and collaborating between the fundamental research and the integrated system research.

Some of the investment we are making using FY09 augmentation will show some benefit to this new initiative that we are studying in 2010.

MODERATOR: All right. We have got time for just a couple more questions. Graham, if you have any follow-ups, please press Star/1 on your phone and get in the queue. Rob, do you have another follow-up?

[No response.]

MODERATOR: All right. Any members of the news media, Star/1 to queue for a question. We will give you --

there we go. Graham, do you have a follow-up?

MEDIA QUESTIONER: This is a looney system.

[Laughter.]

MEDIA QUESTIONER: Right. I have several follow-ups. You were just talking about -- literally just talking about close relationships. Am I correct in reading the document, that there is a bit of a Headquarters streamlining to bring everything closer together? It sounds like you are tightening the focus on next-gen related work at the same time.

DR. SHIN: Yes. Some of our other theme plans for FY10 and out, the research approach here is, again, the building of strong and good foundational research that we have been conducting, staying on the same course for three years. That is really very important and significant in my perspective with a stable level of funding.

So people just don't have to worry about whether their research activity will go away a year later and they can concentrate on producing good technical results, and we are seeing a lot of those.

So now the question is where will all these good research results go, to users or to higher level maturity.

They need to flow to someplace.

So what we are doing is capitalizing on these strong research results coming off and addressing the community need. In the next-gen area, they need a lot of technology infusion, as you all know. So we are trying to make sure that our NASA-developed concepts, capabilities, and technologies actually get transferred to the users or FAA for implementation, and they will implement them, but we need to make sure that the tech transfer is, indeed, happening. So that is one theme that we are employing. So that is what you see.

Also, in the vehicle area, we have Fundamental Aeronautics Program, I should say -- not vehicle area -- that we are trying to do some streamlining as well with that kind of philosophy, so trying to bring efficiency after learning and conducting this research for the past three years or so.

I will give you just one example. One example is we had entry, descent, and landing research both in supersonic projects and hypersonic projects within Fundamental Aeronautics Program, and we had a good reason to do that when we started three years ago. EDL goes

through from hypersonic to supersonic and then subsonic and eventually to landing.

So both areas need to work. Supersonic and hypersonic people both need to work in the EDL, and after three years or so of research, we learned that there could be some efficiency to be gained if we treat our EDL as one research discipline, if you will, and put it all under hypersonic projects, rather than splitting into two projects.

So, based on technical reasons in the management and technical efficiency, we are making some adjustment like that.

So the main thing is trying to make all these good research results coming all from fundamental research to flow and go someplace, as they are intended to, to bring actual benefits and impact to the community. That is the main thing, and for doing that, if we can get some lessons learned out of three years of doing fundamental research, we are taking necessary steps to make that adjustment.

MODERATOR: All right. Thank you, Jaiwon.

We will call it a briefing now, and I would like to provide you with some instant replay information.

Replay of this briefing will be available until 11:00 p.m., Eastern Time, on May 22. You may dial, toll free, 888-566-0439 or, toll, 203-369-3045.

Thanks again to Jaiwon Shin, the Associate Administrator for Aeronautics Research, and to everyone else for joining us. Have a good day.

DR. SHIN: Thank you.

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