HUMAN EXPLORATION AND DEVELOPMENT OF SPACE

HEDS TECHNOLOGY/COMMERCIALIZATION INITIATIVE

CAN-HEDS-01-1 PRE-PROPOSAL CONFERENCE

FEBRUARY 9, 2001

NASA HEADQUARTERS

300 E STREET, SOUTHWEST

WASHINGTON, D.C. 20546

A P P E A R A N C E S

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P R O C E E D I N G S

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MR. MANKINS: So, turning now to the cooperative agreement itself, just a reminder, these are the three types of activities that were laid out in the road maps, these are the three types of activities that are called for in the HTCI WBS and these are the three types of activities that are in the Cooperative Agreement Notice.

The work breakdown structure of the Cooperative Agreement Notice parallels exactly the other work breakdown structures. The HTCI CAN solicits cooperative agreements from all sources for research and development projects. It is different than many federal contract R&D programs. We are not pursuing only agency-specific mission requirements, it's our intention to pursue longer-term exploration and commercial space goals while developing and applying technology in non-space commercial marketplace and in nearer-term space

applications.

So, if there is any question on that, the answer is, our purpose is exploration and the commercial development of space, but we are also interested in trying to engender early and purposeful applications of these technologies commercially, whether it's in space or not.

Proposed projects might include conceptual designs with accompanying analysis, prototypes, ground or space demos or analytical software. We've talked about all of those in general terms. It is our intention to focus on precompetitive technologies and applications, to look toward high-risk and high pay-off opportunities. We are not trying to or intend to get into the business of providing funding for directly commercial activities that ought to be funded from for-profit or capital market or banking sources, or other non-governmental sources. That's not our intention.

We encourage original and innovative proposals for commercial space and exploration

purposes, and we are looking, of course, for broad benefit.

The specific research projects that might result from this solicitation will have a maximum duration of 24 months. There is no minimum duration. However, beyond the resources that are available in this fiscal year and beyond the first milestone, continuing funding is contingent upon availability of funds and progress.

The way cooperative agreements are structured, one lays out payment milestones, the payment milestones have to be accomplished in order to move forward. So, there's like -- it's a -- although you'll have great latitude in the external principal investigator with regard to the conduct of the work and so on, and working the and leading the collaborative research and development activity, nevertheless, this is not a grant. The money doesn't just get transferred without some degree of control on the part of the government, and the in-progress towards the

long-term goals.

Proposals may be offered by all categories of non-NASA organizations, where non-NASA includes non-JPL/JPL, for the purposes of the HTCI is a NASA Field Center. This includes for-profit and non-profit organizations, including institutions and other government agencies.

Leadership of the teams should typically reside in a single outside non-NASA organization. There should be a principal investigator who is responsible, in that organization who is responsible for the conduct of the project.

Supporting participation as team members is open, again, to all non-NASA, including JPL, organizations. There is in the Cooperative Agreement Notice some extended conversation on the subject of international participation. You'll notice that this says all sources, I would refer you to that language rather carefully. In particular, I would

highlight that it is NASA policy not to fund international organizations for research and development.

And so, what this essentially says in the CAN, what the CAN indicates, is that an organization, like, say, Alenia, in Italy, could make a proposal to the HTCI CAN, but if they were to do so, if they were highly scored, their funding would not come from NASA, their funding would have to come from ISA or the Italian Space Agency, or some other source, maybe it's from their own funding, but it's to be determined why they are submitting a proposal to the CAN if they were spending their own money. But they wouldn't get funding for research and development activities from NASA.

And so in teams that come forward, even if they have a U.S. lead, if there is an international member, that's allowable, but that international member cannot be funded by NASA funds, for research and development.

Now, there's a special case, everything

is complex, when one deals with the law, or with policy and regulations, there is a special case which has to do with subcontracting. If you are buying a thing, like a jig, or an existing piece of software, or services, i.e. 20 hours of a consultant's time, that's allowable, even if the individual is an international individual.

But not the conduct of research and development international. And I'll just remind you that it's the -- after we do the overview of the CAN, then we're going to come back and we'll have a good period for question and answer on any issues that may have arisen from the earlier presentations. So, I apologize for not pausing now, but I think this approach will give us a little more structure and make it a little bit easier for us to assure that we're not asking a question that's about to be answered two charts forward.

Regarding the evaluation process, a team of specialists will evaluate the proposals. We anticipate that these will consist primarily

of government personnel at this time. Also, there will be an integration team that will draw together the individual technical evaluation panel results, and put together a set of -- an integrated set of recommended rankings. The selecting official will be the associate administrator for the Office of Space Flight. And we anticipate making these announcements, if all goes well, approximately 90 days from the release of the CAN.

I know cost sharing is a topic of great interest, and so I'm going to touch on it several times during the next hour or so. Just to begin that conversation, we are sponsoring the CAN as part of the HTCI. Even if you are not a for-profit organization, i.e. or an educational or some other non-profit organization, we are explicitly encouraging and strongly encouraging those organizations to propose cost sharing.

For commercial firms, commercial organizations, a substantial recourse

contribution is required. That needs to be at least 50 percent of the total resources, and again, I'm going to come back and talk about that more later, however, that 50 percent cost sharing is only required of any commercial participating organization to the extent of their participation.

So, for example, let's suppose that there were three organizations involved in a consortium bidding to the HTCI CAN, and of those three organizations, one of the three was a for-profit organization, and that for-profit organization had a total of about one half of the resources for the total value of the project at that for-profit organization, i.e. that they were going to spend themselves.

The amount of cost sharing for the total project would only be half of their half. So, against the total value of the project, it would only be 25 percent of the total, assuming that the other half, the other 50 percent of the total value of the project was, in fact,

legitimately going into organizations that were non-profit, not-for-profit organizations in their character.

This applies whether you're the lead, whether you're a member, whatever you are, that's the way to calculate what the desired degree of cost sharing is. There is a great deal of information on this subject, it is very voluminous and it is not reasonable to try to review it all today, nor is it constructive, so I would certainly refer you to 14CFR Part 1274.202, and all of these references are provided in the Cooperative Agreement Notice.

Recommendations for funding will be based on the evaluation of each proposal's relevance to the objectives as of NASA in the HTCI, as stated in the appendices of the Cooperative Agreement Notice. That in terms of the technical merit, and the requested budget, and the evaluation factors are discussed in the CAN, I will talk about them in just a moment.

The government's obligation is to make

awards contingent on the availability of appropriated funds, and the receipt of proposals that we determine to be acceptable under the terms of the CAN. I mentioned the integration panel. I'll just highlight here that in its considerations, the integration panel will look not only at pure technical merit and pure considerations like relevance and cost and so on, but also at overall program balance.

Since we are seeking to make a broad progress against a number of areas in the work breakdown structure, the integration panel will take those factors into consideration, as well. As well as overall programmatic -- overall program budget.

And I mentioned already that the associate administrator for the Office of Space Flight will be the selecting official.

Turning now to the evaluation factors, the following factors will be considered first and foremost, and this factor will carry great weight in the scoring of HTCI proposals.

Relevance and potential to support the goals of the head strategic client and the HTCI Program, including the potential to result in broad benefits and to have significant positive impact to foster U.S. leadership, including space exploration, commercial development and potential terrestrial applications.

So, first and foremost is relevance to our goals and objectives, both within HEDS and in particular within the HTCI. Next, and this factor also carries considerable weight, technical quality and appropriateness of the proposed effort, including the technical approach, the clarity of the proposed accomplishments, and the milestones, identification of appropriate technology metrics that will characterize the advances to be achieved and so on.

So, second is technical merit. Next, appropriateness of the proposed team and management, and this next one has no particular qualifier at the end, and so it is not

distinguished in any way from the last one on the list, the two of these should be regarded as essentially the same in terms of how much weight they will carry in the scoring of HTCI proposals.

But the third one in this list is appropriateness of the proposed team and its management, including relevant experience, qualifications and so on. And, where there is a collaborative team that's being set into place involving two or more non-NASA organizations, i.e. a consortium, the articles of collaboration, which are required to be included in the proposal, will be part of this evaluation factor, will be considered as part of this evaluation factor.

And last on this list, reasonableness of the proposed resources and implementation planning, including the overall business approach, the proposed cost to NASA in terms of realism, reasonableness, allowability and allocation, and the quality and appropriateness

of the proposed resources sharing, if it's appropriate, that are being committed to this project.

So, relevance, merit, the team in the plan, and the resources and the implementation.

There's a lot of discussion about -- or there has been a lot of discussion informally during the last few weeks about the subject of how technical collaboration will work, where multiple organizations are involved, non-NASA organizations, proposal may be submitted only by one, i.e. not by several.

There should be a clear role to be played by the other organizations in the case of a proposal that involves multiple team members. It might, by the way, be in some cases appropriate for parallel awards to be made, that's going to be determined on a case-by-case basis.

Proposals involving more than one non-NASA organization need to have the articles of collaboration, which I mentioned earlier, and

the -- let's see, it just mentions the outline needs to be signed by the appropriate representatives of the involved institutions, appropriately or basically people who can make a commitment for the organization for the conduct of their share of the work as proposed in the proposal, as suggested in the proposal and as documented in the articles of collaboration. And again, please refer to 14CFR 1274.202 for more information.

With regard to collaborating with NASA field centers, cooperative research and development is the reason for doing a cooperative agreement notice. So, technical collaboration with NASA field centers is a requirement of cooperative agreements, but these are not grants where you get the money and get to just go do what you like and later on publish papers, and these are not contracts, where we are buying a good or a service.

The purpose of using these instruments is to conduct cooperative research and

development activities. Proposals should describe the contributions expected from each participating NASA center, including facilities or equipment which may be required. The proposals should be confined only to that which the proposing organization can commit itself, should not propose the utilization of facilities for which there is no commitment, or to propose to undertake activities which cannot be implemented given the available commitments.

Proposals that specify internal arrangements that NASA will make are not acceptable as a means of establishing agency commitment, i.e. if you were to come forward and specify that you want to work with center X and center Y, and you wouldn't want to work with the specific individuals at center X and center Y and you want a specific amount of money in particular to go to center X and center Y, that is not, in fact, entirely within your purview, i.e. when we come to closure on the cooperative agreement, the agency will make the appropriate

decisions on how to best fulfill its commitment to the offeror in terms of the distribution of responsibilities and individuals at the center, and the allocation of detailed investment, detailed funding.

So, internal arrangements of NASA are not -- cannot be bound through the proposal. Other than insofar as if we do give you a letter of commitment and we say we will support your proposal, then we have made a commitment that if this proposal is, in fact, selected for award, negotiations are conducted successfully, that we will carry out our end of the bargain.

Where proposed collaboration with NASA includes unique assets, we talked about the specific center needs to be included, and I am going to talk more about that in the question and answer session in a few minutes.

In the CAN, there is a list of names, here that list is repeated. These are the HTCI technical points of contact at each of the participating NASA field centers. Although you

may conduct informal conversations with individuals, technical or programmatic individuals at various centers for the development of a formal commitment, a formal relationship, these are the -- this is the set of individuals with whom you should interface, both going in and exiting the organization.

A number of these folks are here today, and so I'll just identify them, if I could go through it. At Ames it's Tony Gross; at Glenn Research Center, Steven Johnson; the Goddard Space Flight Center, Rud Moe; at the Jet Propulsion Laboratory, it's Neville Marzwell. Neville, are you here? Neville Marzwell is in the back.

I note that in the Cooperative Agreement Notice, I glitched, I did a bid error and I was duping a common phone number and I forgot to replace the last four digits in Neville's phone number, as it is listed here, the last four digits, 6543 are correct, as it is listed in the CAN, 4659, that is incorrect.

At Johnson Space Center, Al Conde. Al is the HTCI entry point, point of contact at JSC. Kennedy Space Center, Carey McCleskey; Langley Research Center, Mark Saunders.

Oh, I should make a note with respect to Carey McCleskey, Carey's phone number was also incorrect in the Cooperative Agreement Notice, I apologize for that, it was not 0770, it was 6370, this comes from poor penmanship, not an error in duplicating the list.

The Marshall Space Flight Center, Joe Howell is the official point of contact. Also, another member of the HTCI team is Saroj Patel, who will be working with Joe in the area of space transportation. And at the Stennis Space Center, Kirk Sharp.

I just want to highlight that there are appendices in the HTCI CAN with regard to the technical areas of particular importance, they are contained in appendix C, and I would like to take the next few minutes and just run briefly through at an overview level the guidelines that

are provided there.

As mentioned, we are seeking to advance the identification, development and validation of new technologies and new systems concepts that will open up future options for human exploration and development of space. We are doing so with the framework of this family of strategic research and technology road maps, the THREADS.

Within the THREADS framework, HTCI will pursue specific technology areas of particular importance, not otherwise addressed, leading to our objectives, we hope.

Although it's not up there quite yet, there will be by the first part of next week a summary package on the Peer Review Services website providing you with the THREADS strategic research and technology road maps, in terms of the overall framework, for your reference.

As mentioned previously, the HTCI CAN implements the HTCI work breakdown structure, which in turn is a subset of the overall THREADS

strategic research and technology road maps.

Types of activities include three categories, with the anticipated allocation of FY2001 and 2002 resources as shown. Systems integration, advanced concepts, analysis, modeling and related topics, over two years approximately $7 to $8 million.

This is to say that as it says in the CAN, that we have $15 million this year, we anticipate funding of approximately $15 million next year to contribute to cooperative and agreement notice created projects, and as a consequence, if that, in fact, comes to pass, there would be a total over 24 months of about $30 million. Out of that $30 million, over 24 months, approximately $7 million to $8 million over the 24 months is expected to go into this area.

For HEDS-enabling advanced research and technology, again, the same terms and conditions, over 24 months, about $15 million of NASA resources. And technology flight

demonstrations, over the same 24 months, approximately $7 to $8 million in total resources.

And it is anticipated, of course, that the -- because of non-NASA resources sharing by commercial and other firms, other organizations, that the total value of the funded projects may be higher than the government-only limits cited above.

For the first category, systems integration, advanced concepts, analysis, modeling and related topics, this category includes definition, modeling and analysis of advanced systems concepts and architectures or supporting infrastructures, it includes potential space mission applications, including human exploration, space science and the commercial development of space.

This is all also laid out in appendix C in the Cooperative Agreement Notice, but I wanted to take the time to just run through it for you.

Efforts could include market and/or economic analyses to address the potential economic viability of concepts, as well as policy-related issues such as environmental issue assessments for potential terrestrial and space markets. Activities are likely to be interdisciplinary in character and may incorporate aspects of one or more of the technology themes as cited in section 2 of appendix C of the Cooperative Agreement Notice.

Those are the six technical themes that I cited a few moments ago.

Efforts in the systems integration and modeling area could include technology applications and definition activities addressing either exploration or commercial space markets or both.

Projects of this type should be proposed to be implemented over 24 months or less, and there is no minimum. Total government funding of up to $1 million over the 24 months, including fiscal year 2001, will be considered,

1 but there is no lower limit, and it is our
2 projection that the anticipated number of awards
3 resulting from this category would be
4 approximately 15, with an average value of about
5 $500,000 over 24 months.
6 So, this is suggesting although there
7 might be a maximum of a million dollars, we're
8 anticipating that there will be a range of sizes
9 and scales depending on the subject matter under
10 consideration, and that the average will be
11 about half the size of the maximum.
12 Also, because of the availability of
13 funds in this fiscal year, individual projects
14 requiring government funding of up to 250K in
15 2001 will be considered, but there is no lower
16 limit. This is by way of saying that it is --
17 we won't go for like a -- for example, a $1
18 million total value in which you propose to get
19 the full $1 million in fiscal year '01 and then
20 in fiscal year '02, that's when your cost share
21 kicks in. That's not a viable financial plan.
22 I should note, also, as you probably

have seen, if you have been able to download the forms, that the 24 months are spread over three fiscal years. Since these projects will be initiated in the late spring, i.e. the May or June time frame at the earliest, in fiscal year 2001, if they were to have a duration of 24 months, they would continue into the late spring of fiscal year 2003, thus spanning three government fiscal years, even though they were only 24 months in calendar time.

I'm looking at the next chart, but it's not very constructive if I don't press the board so that you can also see it.

With regard to the HEART activities, the HEDS-enabling advanced research technology, this category will address tightly focused exploratory research and technology development. We hope to target tall poles and rapid analyses to identify promising systems concepts that might best fulfill our programmatic strategy, and to establish the first order, the viability of technologies at the -- these new technologies

at the breadboard level.

We anticipate that proposals in this category would typically address no more than one or two, at most, of the individual technology themes. Not to say that you might not have one that addressed multiple technology themes, it's just to say that we anticipate they will typically address a particular technology theme, such as space resources development, space utilities and power, space assembly maintenance and servicing and so on.

Projects of this type, again, as with the others, are to be implemented over 24 months or less. There is no lower limit. The total government funding of up to $1 million over that 24 months will be considered. There is no lower limit. We anticipate that the total number of awards in this category will be approximately 20 over the 24 months, with an average value of about $750K, approximately.

This is a value, I should specify, when I say a value, what I am specifying here is

value to the government, i.e. the cost to the government, not the total value of the project.

If you do the math, 20 projects with an average value of $750K works out to $15 million over 24 months, and we are planning that over the 24 months we would allocate approximately $15 million to this category of activities resulting from the Cooperative Agreement Notice.

Similarly, individual proposals requiring government funding of up to $400K in fiscal year 2001 would be considered, and there is no lower limit, and this goes to the same issue that we described just a few moments ago.

I wanted to talk a little bit about the subject of technology flight demos. This category addresses initial demos of viability for key concepts and elements in space. They may involve the utilization of potentially nearer term technologies, with an emphasis on enabling multiple purpose space or terrestrial applications. Proposals might address two or more of the individual HTCI technology themes as

cited in appendix C, section 2.

By this, what I am suggesting is that the appendix C, section 2, which lists all of the technology areas of interest, should also be referred to when anticipating a technology flight demonstration project. We did not want to relist all of those technology areas again. And we contemplated trying to put in some kind of a table that would provide a complicated crosswalk in each of those areas, but it didn't really work very well and it didn't communicate well. So, we instead opted for the words which are in the CAN.

And we're anticipating that these flight demonstrations will be interdisciplinary in character and would involve more than one element and potentially two or more of the technical themes.

In this category, individual proposals, requiring funding of up to $400K in '01 would be considered. There is no lower limit. Projects again should be proposed to be implemented in 24

months or less. There is no lower limit. Total funding, government funding, of up to $1,500K, i.e. $1.5 million over 24 months, including fiscal year '01, will be considered. There is no lower limit.

We are anticipating approximately eight awards, with an average value of $750K over the next two years.

Just to talk about this a little bit further, activities supported under the HTCI might include either one of the two types of technology flight experiment or demo activities. First, a preliminary technology flight demonstration definition studies, for example, pre-Phase A studies, of potential small-to-large scale technology flight experiments and demos that might be conducted in the future, contingent upon future programmatic decisions and the availability of future funds. Or implementation of small-scale initial technology flight experiments or demos, but they must be consistent with the availability of funds in the

HTCI as it currently stands, and as I described a few seconds ago.

Any proposed technology flight demonstration definition study must include identification and documentation of the potential costs of the proposed technology flight demonstration, i.e., we are not seeking a purely technical study that does not try to get a handle on what would the demonstration or the experiment cost if it were to be implemented. So, a preliminary cost estimate is required.

It is recognized, however, that a detailed cost analysis is likely to be a product of doing the definition study. But we would like to get some handle for purposes of categorizing across the following three types of potential technology flight demonstrations or experiments: Small-scale would be something, say, between a half a million and a couple of million dollars, that's total cost excluding launch; moderate-scale would be $5 to $15 million, total cost excluding launch; or

large-scale, approximately $25 to $350 million in cost, total cost excluding launch.

This is not to say that the definition study would be funded for $0.5 to $2 million. The definition study would be funded consistent with the guidelines provided on the preceding page and in the Cooperative Agreement Notice. This is to say that for those studies, we're anticipating trying to categorize the flight -- technology flight demonstration studies into large, medium and small bins for purposes of looking at how they might be mixed and matched programmatically.

I also tried not to get too focused, and therefore we deliberately left a gap between two and five, I just want to be perfectly clear, there's no reason that something couldn't be $2.3 million or $4.7 million, it's just to say that it is not an absolutely diamond sharp distinction between something which was $2.50 and something that was $2.51. These are intended to be rough approximate categories, and

just for purposes of understanding how things might fall.

And I should say, just to reiterate the point one more time, although we are looking for that information to be provided in the proposal, we are not intending that that is a firm fixed price offer on anybody's part. This is just intended for scoping, and it's anticipated that a better understanding of the potential cost would be a result of doing the demonstration definition study.

As I mentioned, emphasis is on areas that integrate technologies from a number of areas within a theme or across themes. They might involve all of the technical themes of interest.

In the proposed activity, this is just an observation, in the CAN, the offeror should indicate clearly what would be the technology research value of doing the demo or the experiment, i.e., what would be the -- you should indicate clearly what technology

experiments involving which technologies would be conducted as a part of the technology flight demo.

Coming to closure on this part of this -- of the conversation, although it has not been a particular conversation yet, it's been more of a monologue, I apologize for that. It's going to be a conversation when I get done with the data, though.

The CAN was released on February 5th, Monday. We are holding the pre-proposal conference today. The results of this meeting will be available, including the charts, will be available on the Internet next week. It's our intention, also, to post the results of the court reporter team in our discussion, transcripts, on the Internet next week. Notices of intent are due on March 7th, i.e. in approximately a month. Proposals are due on March 22nd, approximately two weeks after that, and announcements of award are anticipated 90 days from last Monday.

1 For additional information, I've
2 provided here the website, this is also
3 available in the Cooperative Agreement Notice.
4 I am providing here at the end my locator
5 information, so that you will please feel free
6 to contact me with any question or topic of
7 interest. I'll note that, of course, any
8 question of general interest, I will -- and
9 which has not already been dealt with in our
10 question and answer today, or subsequently, I
11 will convert into a question and answer which
12 will be subsequently posted to the Internet.
13 So, we can continue our dialogue over the next
14 couple of weeks, and everybody will benefit from
15 the discussions, even if you're not around.
16 That does not include any -- obviously
17 any proprietary information or any other
18 confidential information that might be discussed
19 incidentally. However, although I am providing
20 my locator information here, I would also urge
21 you to start with the HTCI points of contact at
22 the various centers. We have worked very hard

to be a team, we wrangle almost daily about the direction and content of the program, and although we are not of precisely one mind, we are definitely of one blood, because we've spilled enough of it.

So, please feel free to contact the -- if it is a technical question, or collaboration question, or even a programmatic question, please feel free to contact the appropriate HTCI point of contact at one of the participating centers. Which is not to say that you shouldn't feel free to contact me, too, but if I get saturated, there will be a smaller and smaller number of calls that I am able to answer.

With that, and we're running a little bit ahead of schedule, which is a good thing, I would like to go ahead and take a ten-minute break, rest my throat for a minute, and we'll come back, how about at 20 minutes to 3:00, and begin with the question and answers.

(Pause in the proceedings.)

MR. MANKINS: In order to stimulate the

conversation, we've gone ahead and through our own conversations and some e-mailed questions have developed a set of anticipated questions and answers to talk about. One of the very nicest things about the arrangement that allows our court reporters to be here is -- our court reporter to be here is that I don't have to take any notes, so I am going to rely -- when we get to that part of the conversation, on you, if you would like your question answered authoritatively, to step up to the microphone, and as we discussed a couple of hours ago, to identify yourself and your organization, so that we can correctly connect you with the name that you've signed in with, as you came into the meeting.

This package is intended to begin that conversation of questions and answers, with a set of anticipated questions and pre-prepared answers, all about the HTCI CAN. I will refer you -- without turning to it in the flip charts, I will refer you for a moment to the last chart

in this package, just for purposes of our discussion.

Now, page 17, as it says, the official answer to all questions discussed at this conference will be provided on the Internet next week. All answers provided during this meeting should be regarded as only preliminary, and not official, i.e., we're going to talk about it, even the answers which are in this package, don't walk away saying ah-hah, here is the policy, because it might not be. That isn't to say we haven't done our best job in preparing these pre-prepared questions and answers, but only that for purposes of the process, the official response, the one that will get vetted through the general counsel's office, will go online next week. And so please plan to make reference to that source later. And I will, of course, when we get done with this discussion, I'll come back in about 20 or 30 minutes and I'll show you that chart again and reiterate the point.

1 Probably the single question of
2 greatest interest to the -- the folks who have
3 inquired about the HTCI from the for-profit
4 organization side of the house, or side of the
5 family, is the following: Is 50 percent cost
6 sharing really required?
7 The answer: A substantial resource
8 contribution on the part of the recipient is
9 required. The recipient is expected to
10 contribute at least 50 percent of the total
11 resources required to accomplish the cooperative
12 agreement project. The recipient contributions
13 can be either cash, and by the way, that should
14 be not case, but cash, that's a typo, it should
15 be either cash or non-cash or both.
16 In those cases in which a contribution
17 of less than -- and by the way, I'm going to
18 talk more in a few minutes, as you flip forward,
19 you already know that I am going to speak in a
20 few minutes at greater length on the subject of
21 what is allowable in terms of a resources
22 contribution and what is not.

In those cases in which a contribution of less than 50 percent is anticipated from the recipient, approval by the Associate Administrator for Procurement is required prior to the award.

So, if a for-profit organization makes a proposal and it includes the 50 percent or more required resources sharing in that proposal, non-NASA resource -- non-government resources sharing, then beyond the technical evaluation and the integration panel recommendations, the source selection official is the final word.

In the event that there is a proposal that was a cost contribution of less than 50 percent, the Associate Administrator for Procurement is the final word. So, there is an additional iteration.

Such a proposal, one that proposes from a for-profit organization or a team, including for-profit organizations, that suggests less than 50 percent cost sharing for that share,

that amount of the total value of the project which will be implemented by the for-profit organization should include an explicit request for approval for an amount of cost sharing less than 50 percent. Such a request should address the evaluation factors in the solicitation, and how this proposal accomplishes those objectives to such a degree that a share less than 50 percent is warranted.

Just to give you two potential examples, for example, or give you three examples. Example 1, you come in with a proposal, you're going to do 50 percent cost sharing, and the proposed project is going to create a product for the commercial marketplace, and your 50 percent cost sharing is cash, it's rock solid. It doesn't matter, because the product is nonresponsive, we're not going to produce specific explicit competitive products for the commercial marketplace. Such a project should, of course, be fully funded from the private sector, and not from NASA.

The second case, a proposal comes in and it is filled with content consistent, i.e. research and development or studies, so on, consistent with the guidelines of the HTCI and the programmatic purposes for this funding, and it includes resources, I'll say less than 50 percent, and the purpose of the technology development is to validate -- precompetitive, but to validate the technology which is likely to go into a commercial application in the next few years.

Such a proposal would be stringently looked at, because the question would be if it has good commercial potential in the next few years, why isn't it able to come up with the 50 percent cost sharing?

A third case, everything like the second case, consistent with the goals and objectives of the program, technical content is good, and the potential applications of the technology or the results of the study and so on deal with things in the farther term, that might

constitute a rationale for less than 50 percent. Depending on the specifics of the circumstances and how it tracks with the goals and objectives of the program and the evaluation criteria.

These specific words are taken from the NASA Grants and Cooperative Agreements Handbook. So, where such a request should address and so on. So, this language is not my position, it is official NASA policy.

So, what about cost sharing? Well, resources sharing, there have been lots of -- I've gotten lots of emails on this, so I made up a checklist. Can it include cash, derived from for-profit financial activities, such as profit? Yes. That's just fine. We would like lots of it.

IR&D funds, from our perspective, this is the same as cash. So, the answer is yes.

Labor hours, including donated labor hours, the answer is yes, that's the same as cash from our standpoint.

State and local government funds, i.e.

non-federal government funds, the answer is yes. That is perfectly good cash.

Tangible property, for example equipment and/or hardware, three subcases. One, hardware resulting from previous NASA funds? No. i.e., let's suppose NASA invested in a technology development activity and it resulted in a widget, you cannot then turn around and take that widget and contribute it to the project, because we already -- we paid for it, and so it's not an independent contribution.

Along those lines, and one thing that was tangible, I'm doing tangible property here, tangible property resulting from previous other government agency funds? The answer to that one, I don't know if you've got a question mark in yours, I happen to have a question mark in mine, but the answer to that one is no.

MR. NELSON: All the handouts have the word no replacing the question mark, except the ones that were distributed to the room per your instructions.

MR. MANKINS: Very good. Thank you. What about tangible property resulting from some previous allowable resources activity, i.e., there was a previous IR&D activity, or previous cash, i.e. profit-funded activity, or previously in donated labor hours, i.e. any of our allowable contributions, if it was in the past, and it resulted in a thing, a widget, which can then be contributed, that counts, that's fine.

What about intellectual property? I have the greatest idea and it's worth a million dollars and I'm going to give it to you. No. Intellectual property does not count as a resources sharing for purposes of NASA policy.

What about other U.S. Government agency and/or program funds? I have a contract with the Department of Defense for the following, and I'm going to contribute my contract with the Department of Defense money to your project. No. That is not an allowable cost share.

What about international government agency and/or program funds? Yes. If somebody

overseas wanted to give you money to do our project, that would be fine.

MR. CASSAPAKIS: I have a question.

MR. MANKINS: Wait. Please stand and approach the microphone. I was going to say, before you speak, let me just say, that -- and those are the two questions that have to do up front here with cost sharing, and I'm about to turn to a different subject. So, if there are any questions or discussion on the subject of cost sharing, I open the floor to the mike.

MR. CASSAPAKIS: I'm Costa Cassapakis.

MR. MANKINS: Say it again slowly for the reporter, please.

MR. CASSAPAKIS: Costa Cassapakis from L'Garde, L, apostrophe, G A R D E.

MR. MANKINS: Thank you.

MR. CASSAPAKIS: On the subject of other NASA funds and other used government funds and all that, what if this contribution is from other commercial program funds? Is that a yes or a no?

MR. MANKINS: Commercial organization funds or allowable funds invested in the past which resulted in a tangible asset, the answer is yes. However, if it is simply some cost, i.e. we've spent a million dollars pursuing this idea over the last several years, those sunk costs are my contribution, the answer is no.

MR. CASSAPAKIS: Okay, thank you.

MR. MANKINS: Any other questions? Please, take your choice, you're right square in the middle, either way.

MR. SIEGFRIED: I'm Bill Siegfried from Boeing. I had two questions. One, two of your charts that talked about sharing, the systems weren't -- did not call out 50 percent sharing. On either of your charts.

MR. MANKINS: You're referring to the Cooperative Agreement Notice summary charts?

MR. SIEGFRIED: Yes. You called it out for the R&D work and for the demonstration work, but not for the systems work.

MR. MANKINS: Yeah. This is purely an

accident of the chart making.

MR. SIEGFRIED: Okay.

MR. MANKINS: The Cooperative Agreement Notice requirement for cost sharing includes all categories of activity under the HTCI CAN.

MR. SIEGFRIED: I didn't do it. The second question, a lot of us have proprietary programs that we have spent IA money in developing that would allow us to do this work much easier. Can that count as cost sharing, the money that we have spent to develop those programs?

MR. MANKINS: If it's in terms of intellectual property, i.e. methodologies and so on, the answer is no. Intellectual property cannot be contributed, those costs, although they are beneficial, and they may give you a better competitive position with regard to the competition, given the evaluation factors that deal with management and process and so on, they are not an allowable contribution vis-a-vis cost share.

MR. SIEGFRIED: Thank you.

MR. SAUNDERS: How about software?

MR. MANKINS: You have to follow protocol.

MR. SAUNDERS: I retract my question.

MR. MANKINS: Okay, good.

MR. BEKEY: Ivan Bekey from Bekey Designs.

MR. MANKINS: I should tell you I am under strict terms and conditions here. If I don't follow protocol, she won't come back, so I'm following protocol.

MR. BEKEY: Question, is there a guideline for the ratio of funds between a commercial entity and the government partner?

MR. MANKINS: There is no specific guideline, it is more in line with the -- what is the particular activity that might be undertaken, and I assume when you say government partner, you're referring to a NASA Field Center?

MR. BEKEY: Yes.

MR. MANKINS: One or more?

MR. BEKEY: Yes.

MR. MANKINS: I am going to come to that in a few moments with regard to NASA Field Center participation. I'll jump ahead for a moment, though, and say that the cost sharing and the overall distribution of responsibilities will be judged stringently with regard to reasonableness, and in particular, there will be no shilling, there will be no case in which somebody at a university or somewhere is the principal investigator, and yet this large amount, this some predominant share of the actual work is going to be done inhouse at NASA.

We're looking for partnerships in which there is an appropriate set of responsibilities. Typically, that would probably involve the preponderant share of resources being invested outside the agency.

Now, this is, perhaps, also just a little bit of a dodge on our part, in the following sense, I'll say a little bit

1 misleading, I guess, as opposed to a dodge, fix
2 that in the transcript, in that our labor hours
3 don't come out of my $15 million. So, it might,
4 in fact, very well turn out that when you look
5 at the total balance of inhouse and external
6 activities that are created as a consequence of
7 this CAN, that they're pretty even in terms of
8 total scope, but the $15 million are R&D
9 dollars, not labor hour dollars, which come from
10 another account at NASA.
11 But with regard to the $15 million
12 which is involved in this solicitation, it is
13 anticipated that the preponderance, a great
14 preponderance of those resources will turn out
15 to be invested through and by non-NASA
16 organizations. But there is no specific
17 equation. It depends on the case-by-case.
18 It might very well emerge that in one
19 case a very tiny fraction of in-house resources
20 is necessary, but there may be several people
21 working on it, and in another case, because of
22 the use of a particular facility, that the

in-house share is substantial, but all the intellectual leadership is still external.

So, there's no -- there's no hard and fast number.

MR. STIEREN: David Stieren from the National Institute of Standards and Technology.

MR. MANKINS: I'm sorry I didn't return your call yesterday, but the answer was no, there's no requirement for --

MR. STIEREN: I found that out, thank you. We're an agency of the Department of Commerce, and I have a cost share related question, but it may actually be more of an eligibility question. We're interested in submitting a proposal to this CAN where our only partnership would be with a NASA Field Center.

So, my question is, to what extent can we use our Department of Commerce allocated funding for work on such a proposal and to what extent can we leverage our funding through reimbursement of direct costs on NASA funding?

MR. MANKINS: This is a nice and

difficult question. Nice in the sense of being complex. I believe the answer, and please check the web next week, will be that all categories of non-NASA U.S. organizations, all non-NASA organization may propose, so you may certainly propose that your indirect charges, such as labor and so on, or those sorts of charges, probably need to be covered by your agency, that your direct charges may, in fact, be allowable, may be recoverable, and that the NASA Field Center participation, as appropriate, and assuming everything is scoped and appropriate with regards to the terms and conditions of the CAN, is also allowable.

So, to me, the way you've stated it, sounds compliant. I will check that, though, and I would appreciate it if you would, please, for the record send me an email detailing the question and I will work it on Monday.

MR. STIEREN: One other question of just point of clarification, labor is not considered to be a direct cost?

MR. MANKINS: For government agencies, it comes from another category, and so the answer is in general no.

MR. STIEREN: Thank you.

MR. MANKINS: For civil service, for civil servants. And I'm going to talk more in a few minutes about the question of support contracting, or contract activities that involve a for-profit organization, and subcontracting. I'll come to that, though, in a few minutes. You had a question?

MR. BACHMAN: I'm Tovey Bachman from Logistics Management Institute. I'm interested in knowing if there are any criteria for the extent to which nonprofits should contribute in cost sharing.

MR. MANKINS: Organizations which are non-NASA, including JPL, and which are not for-profit organizations, are "strongly encouraged to cost share." There is no specific percentage requirement.

MR. BEKEY: Okay, so it would just be

judged by the reasonableness of what you're trying to do and whatever other --

MR. MANKINS: And based on the terms and conditions of the CAN, all other things being equal, two proposals which are otherwise of equal, equal merit, one which had responded to that guidance, and one which had not, the one which had, would probably turn out to be preferred.

MR. BACHMAN: Okay, thank you.

MR. MANKINS: Although it very seldom emerges that all other things really are equal.

MR. BACHMAN: Indeed.

MR. YARBROUGH: Ed Yarbrough of Honeywell, soon to be GE, who knows?

Anyway, the question is the reverse question on your intellectual property. I would like to know since it does not contribute to the cost share fraction, I was wondering if we would have 100 percent of the intellectual property rights stay within the confines of the corporation.

MR. MANKINS: Say it again, please, sorry.

MR. YARBROUGH: I was wondering if the intellectual properties rights, since they are not contributory to the cost share, if they would be 100 percent retained by the corporation.

MR. MANKINS: No.

MR. YARBROUGH: Okay. Fair enough.

MR. MANKINS: However, however, if, in fact, you're talking about not intellectual property which results from the cooperative R&D project, but rather are talking about intellectual property that may be input, it made a contribution from the company, i.e. it's already existing intellectual property, to the best of my knowledge, that is unaffected by entry into the cooperative agreement project.

Your existing intellectual property is unaffected. And I will certainly validate that. But so if your -- I think that's clear. So, you don't lose your intellectual property or have

any kind of a lien placed upon it by using the pre-existing intellectual property -- by using it in this vehicle.

Any other questions? Please.

MR. BROWN: David Brown, MD Space Robotics Corporation.

The question is with respect to tangible property on the hardware or software, resulting from an international government agency. Yes, no?

MR. MANKINS: International organizations are an allowable source of funds in terms of cost share. I suspect that with regard to the hardware case, the answer will be yes, that that could be an allowable contribution. There will be some question, I suspect, with regard to the valuation of that contribution, and its reasonableness.

With regard to software, since software can be readily copied, it basically it's copyrightable material, as opposed to a tangible asset, and therefore it may be regarded as a

form of intellectual property as opposed to real property. Real property tends to be things, I will ask the question, I suspect the answer will be no, but I will ask the question.

MR. BROWN: Thank you.

MR. MANKINS: Assuming that she reminds me that I will ask the question, otherwise I won't know.

MR. ALDRIN: Andy Aldrin from the Boeing Company. Is current year IR&D applicable, any contribution?

MR. MANKINS: Any IR&D which is not yet spent, but it's current year or past year.

MR. ALDRIN: As in not yet spent as of the day we sign the contract?

MR. MANKINS: Not yet spent as of the day we sign the agreement. In other words IR&D for purposes of signing the agreement does not constitute cost share.

MR. ALDRIN: Okay.

MR. MANKINS: Any other questions on this subject, and we can always come back and

revisit it again later, because it will come up a little bit more in a few moments.

Okay, page 5. There are technical areas in the CAN that refer to "other, lower priority" technology areas. What does this mean? May a proposal be submitted in these areas or not?

As I elaborated in my opening observations, we have identified through a strategic planning process a set of research and technology areas that are important to future human exploration and development of space. Based on mission needs, these strategic research and technology road maps and other known sources of funding in these technology areas, both inside and outside of NASA, as well as some other programmatic factors, we have identified a subset of the overall strategic research and technology road maps that are "of particular interest" for the FY2001 HTCI Cooperative Agreement Notice. And please refer to appendix C in the CAN for information on this.

Proposals may, in fact, be submitted in response to other areas not specified as being of particular interest, just as they may be submitted for particular technologies or concepts not identified as examples in the Cooperative Agreement Notice. However, the overall evaluation factors, as specified in the CAN, will be followed.

And we've tried to be clear on what our position is vis-a-vis which technologies are of particular importance based on these other considerations, and those which are important but of lesser priority.

And I note just here a slight quotation, relevance and potential to support the goals in the HEDS plan and the HTCI Program. And earlier I alluded to the particular example of Earth-to-orbit propulsion, which is tremendously important for exploration and development of space, also is a very adequately funded in another budget line, and therefore is not a good programmatic investment for the HTCI

with its limited resources.

I'll mention one other example, on the other side of the ledger, which we discussed in a meeting earlier today, namely we do call out a theme, habitation and bioastronautics, within that theme, we call out an area of particular importance, being EVA systems, and we have a list identified in the Cooperative Agreement Notice, appendix C, specific examples of concepts and technologies associated with EVA systems, it might very well be that we have not thought of everything. This is possible.

And so proposals that come in with a different approach or a concept or a technology in EVA systems that doesn't happen to be specified in our examples, but addresses the challenges that we are trying to solve, is perfectly fine. Since we are trying to enter into cooperative research and development activities.

Any other questions on the general subject of the technical themes or this question

of other versus not other?

MR. SPAMPINATO: Yeah, I have a question. Be with you in a minute. I'm Phil Spampinato from IOC Dover.

You have said earlier that technical collaboration with field centers is required for these proposals. I'm confused about how there would be the peer reviewers and the technical collaborators, can they, for example, co-propose with us?

MR. MANKINS: The way the cooperative agreement process works, an individual NASA Field Center or an individual at a NASA Field Center cannot be a co-investigator, they may not co-propose. It is, in fact, your proposal. However, we are interested in collaborative research and development activities, and in fact, they are a requirement of using the Cooperative Agreement Notice and cooperative agreement financial instrument.

The vehicle for discussing those relationships formally and including them in the

proposal is the letter of commitment and the proposal itself. This does not constitute a conflict of interest for the NASA Field Center, in the following sense: Any organization at any NASA Field Center which is willing to enter into a collaborative research and development activity with one offeror must be equally willing to enter into that same collaborative research and development activity with any offeror who had a similar interest.

I will give a specific example. If someone wanted to do a wind tunnel test of a new aeroshell body design and they wanted to use a hypersonic tunnel or the arc jet set at Ames, well those arc jets, if they were going to be available, and they were going to be made available to that one offeror, equally must be made available with the same kind of information being provided to any offeror who had a similar idea and wanted to pursue similar research.

So, it's one of -- it's an issue of exclusivity. So, yes, you have a discussion

1 with a NASA Field Center, yes, you identify a
2 collaborative research and development activity,
3 yes, you include that in your proposal,
4 including a letter of a commitment from the NASA
5 Field Center regarding the utilization of those
6 resources, possibly facilities, possibly
7 expertise generally stated, not individuals by
8 name as co-investigators.
9 Well, if the NASA Field Center is
10 willing to make such a commitment to you, they,
11 in fact, are obligated to make the same
12 commitment or the same kind of commitment,
13 depending on the details of the other proposal,
14 to some other offeror, who may have similar
15 interests.
16 If you look at the way a NASA research
17 announcement works, in which a NASA Field Center
18 is a co-investigator, in that case, it is an
19 exclusive relationship, they may enter into an
20 exclusive relationship with the university of X,
21 Y, Z, and not be willing to participate on any
22 other proposal, other than the one that they are

co-investigator on with X, Y, Z. It's not true under the cooperative research and development program such as this.

MR. SPAMPINATO: Thank you.

MR. STIEREN: To take that field center just a discussion further.

MR. MANKINS: Um-hmm. I will note that I have a couple of my draft questions coming up in a minute regarding NASA field centers. Please go ahead, but I just wanted to note, I am going to get to that in just a second.

MR. STIEREN: I might be jumping ahead, I'm Dave Stieren from IST again.

Previous discussions that we had with the NASA field center, the question that arose was if they are interested in participating, how do they pay for it?

MR. MANKINS: You are jumping ahead, I would like to address that in a few minutes. I cover that explicitly. I have a chart for that. And the answer is straightforward.

Any other questions on the general

subject of the technical areas, as identified in the CAN appendix C?

MR. ALDRIN: Andy Aldrin from Boeing again. Can we propose more than one line item from the WBS, and may that proposal include line items from different sections of the top level; in other words, can it include systems analysis as well as HEART?

MR. MANKINS: Yes.

MR. ALDRIN: Thank you.

MR. MANKINS: Or you may -- any organization, not you in particular, any organization, may offer several proposals.

MR. ALDRIN: Right.

MR. MANKINS: But the general guidelines, which are stated in the CAN, which I alluded to a few minutes ago, suggest that in general, proposals to HEART should address a particular theme.

MR. ALDRIN: But in a single proposal, can you include tasks which are both systems analysis and technology development?

MR. MANKINS: The answer I think is also yes, although typically one would anticipate that the systems studies would typically be associated with the technologies in the theme.

For example, if one were proposing to theme 2.2, space utilities and power, and one were pursuing structural concepts and materials, and had a great idea for a new vacuum formed aluminum shell that structural modeling of the shell would be a reasonable systems analysis thing to do in conjunction with trying to fabricate the shell.

MR. ALDRIN: Right. Okay.

MR. MANKINS: As opposed to here's a shell, and oh, by the way, we're going to slip in some money to look at the Pluto missions.

MR. ALDRIN: Fair enough.

MR. MANKINS: Any other questions at this time, and obviously other questions can be answered later.

By the way, something I intended to

mention at the beginning of this session, which I did not, we have prepared a series of forms, John, where are you? John Nelson? There you are. Peer Review Services, John Nelson, has prepared a series of forms which are my favorites, they're called issues to be considered, ITBCs, and this is basically to allow you to have second thoughts later.

So, at any time during this conversation, you have an idea, you can make a little note, if you would please submit it, either on the form, if you wish, or in an email providing this same kind of information, it will make it much easier to address your interests and your issue in a timely way. And I believe, John, that those are up front?

MR. NELSON: They are, they're on the table.

MR. MANKINS: So, they're on the table at the entrance. So, when you're leaving, if you're interested in providing follow-up questions, and getting quick answers, I would

urge you to use either the form or the format.

Staying with the general area of technical content, this question is, so, how serious is NASA about flight experiments and demos? Given that there's only a few million dollars, there's a cap on it at no more than a couple of million dollars over a couple of years, so the total budget of $7 to $8 million, is NASA serious?

And here I just repeat the exact language which is in the CAN, in the following order, namely, our purpose here is not to suggest that we can do a new millennium class mission with a million and a half of NASA money, but rather to begin the process of defining, and perhaps flying a few small experiments, which will move us towards a flight experiment and a flight demonstration program for THREADS, Technology for the Human/Robotic Exploration and Development of Space. And so we are pursuing smaller scale technology studies with an eye towards better understanding and better

supporting future programmatic decisions about the investments that would be necessary to really do the demos.

Please.

MR. BLAIR: Brad Blair, Colorado School of Minds. Would that include KC135 flights for something like a combustion synthesis experiment or --

MR. MANKINS: That's ground research for purposes of the CAN.

MR. BLAIR: What's that?

MR. MANKINS: Sorry to interrupt. Why don't you go ahead and finish.

MR. BLAIR: Something like an excavator demonstration or perhaps a combustion synthesis experiment over -- using a parabolic flight to assimilate a planetary gravity rather than expecting microgravity.

MR. MANKINS: For purposes of the HTCI CAN, technology flight demonstrations and experiments are exoatmospheric, they are in space, not in aircraft. In aircraft or drop

towers or any other terrestrial facility which provides a temporary or a simulated zero gravity condition such as a flat floor in two dimensions is not flight. That's -- that would fall under the HEART, HEDS-enabling advanced research and technology category.

MR. BLAIR: Thank you.

MR. MANKINS: I promised we would get up to the point of talking a little more about NASA Field Center participation. This is the first of a couple of charts on that subject.

Must an offeror specify the details of a collaborative relationship with the specific NASA center? Is a proposal required to have a letter of commitment from a NASA Field Center with which a collaborative activity is planned?

The answer, offerors are required to plan on a collaborative research and development activity with NASA. We talked about that at length a few minutes ago. The proposal is required to indicate how the collaboration will be done, including the NASA center or centers,

the offeror should obtain a letter of commitment from the appropriate center or centers. If the offeror submits a proposal without the requisite letter of commitment, then he or she is taking a risk, in capital letters, that the proposal may be found to not be viable during the evaluation process.

For example, the center might not be planning to support proposals of that type, or the center -- the cost of center support to the proposed activity might not be consistent with program policies or overall program scope.

For example, a proposal may come in to utilize the arc jet facility at Ames, I'll use Ames again as my example, and during the next year the arc jet facility is tied up for 28 percent and it's offline for 72 percent of the time, and it's not available to support you. In which case, your proposal is nonviable, and maybe you didn't even have to use the facility at Ames, maybe there was another facility or another approach you could have used.

Different example, let's suppose that you've come in and you want to use -- this was an example that I used earlier, it's intended to be humorous, but nonspecific. Let's assume you want to use the ham sandwich test chamber in Cleveland. Well, it may very well be that the cost of using the ham sandwich test chamber is $50,000 an hour and you want to use it for 100 hours. And the scope of your project is hypothetically only a couple of hundred K. Then even though that facility may very well be available, the costs of using it are so exorbitant compared to the rest of the proposed activity, that it is inconsistent with the program's policy that we will not basically pass money through to the NASA Field Center by way of this vehicle.

I've got a -- I've got a couple of more that relate to this issue, and so I would like to go ahead and propose doing those first and then invite questions, just in case the additional discussion answers a question that

might be asked or stimulates a different approach to a question.

Are there guidelines for what should be included in a letter of commitment? The general answer is no, there is no -- there is no handbook for writing letters of commitment. Every case will be different, and each letter should be tailored appropriately. However, a typical letter of commitment might very well include the following kinds of information: A description of the support to be provided by the NASA Field Center to the proposed research and development activity, identification of any specific facilities or other resources to be provided by the NASA Field Center, including, as always, a JPL for purposes of the HTCI, in the event that the project were to be selected, and this includes civil servant full-time equivalents, or FTEs, i.e. NASA personnel.

Just by way of an example, for those of you who are not familiar, 0.4 FTE is the same as 40 percent of an individual's time for a full

year, but it should not include naming specific individuals as co-investigators. As we described, such a relationship violates the sort of level playing field requirements of a cooperative agreement as the vehicle.

A typical letter of commitment might include estimates of the general scope of resources that would be needed to support the project if it were to be selected, and in fact this information is needed, and should be included in the proposal as well as in the letter of commitment, i.e., in rough terms, what would the cost be to the overall value of the project of using that arc jet facility or that ham sandwich chamber.

The letter of commitment, however, please be aware, is not a firm commitment of NASA funding. It is an estimate contingent for purposes of the proposal process and is contingent on success in selection and the details that will come out of the negotiation.

So, there's some -- it's intended to be

an estimate, it's intended to allow the proposal to be evaluated, but it is not -- it is not -- it should not be taken as a contractual obligation on the part of the government. And you are strongly urged to work with the identified HTCI point of contact, and we mentioned their names previously, as provided in the CAN, a number of them are here today, at each appropriate center, to assure that these are complete, i.e. their relationship is well defined, and that the commitment can, in fact, be fulfilled in the event of selection for the scope of resources that are estimated and included in the proposed activity.

I would like to do one more and then come back and open the floor to general questions on this subject, or all questions on this subject.

Namely, in the case of proposals with civil servant participation, and as we've just described, this is just the question, as we've just described, all proposals are to end up with

collaborative research and development activities, and so all proposals will, in fact, have civil servant participation, by definition. Does the offeror transfer funds to NASA? Is it allowable for NASA to do research and possibly to procure things related to the proposal?

And the answer is, it is possible and, in fact, required, for NASA centers to be collaborators and partners in the implementation of R&D under a cooperative agreement. And this NASA center participation could include costs associated with using facilities, program support associated with civil servants, et cetera. However, to be perfectly clear, the project must be led by and implemented predominantly by a non-NASA principal investigator. Pass-throughs back to NASA where the PI isn't really doing the work will not happen. They are inconsistent with program policy, they will be booted from the evaluation process. And we will scrub them closely. So, it's just not kosher.

1 That is not to say what is the right
2 ratio? This goes to the issue that Ivan Bekey
3 raised a few minutes ago. There's no ground
4 rule that it must be 15/85 or 5/95. It depends
5 on the project, and it depends on the specific
6 scope of the intellectual activity to be
7 undertaken and the resources at NASA that would
8 need to be brought to bear to meet the technical
9 goals of the project.
10 CAN provides a fair amount of
11 information on this subject, what data on
12 collaboration with NASA Centers should be
13 provided and so on. Regarding transferring
14 funds to NASA. Funds to cover NASA Field Center
15 participation in a proposed cooperative
16 agreement project will be transferred after the
17 successful award and negotiation of the project
18 directly from NASA Headquarters to the
19 appropriate participating NASA Field Center.
20 We do a thing called a 506 authority,
21 transfers funds directly from NASA to the
22 center. Those funds will be transferred from

1 NASA Headquarters to the center and will not
2 pass through the outside organization.
3 I'll give you an example. Let's
4 suppose that a cooperative agreement project
5 were to be initiated in which there were two
6 NASA Field Centers working with an outside
7 consortium. The funds -- the project when
8 selected would be assigned to one of the two
9 NASA Field Centers that was involved in the
10 collaborative R&D, for financial purposes, for
11 management of the cooperative agreement,
12 negotiation and so on.
13 The funds for the money -- the monies
14 to be going outside would go to that NASA Field
15 Center, and would go through that NASA Field
16 Center to the outside organization. In
17 addition, the funds for the in-house work at
18 that first NASA Field Center would go from NASA
19 Headquarters also to that NASA Field Center for
20 the in-house implementation. The other NASA
21 Field Center, which is a part of the cooperative
22 agreement, but is not the one which is executing

the -- is part of the project, but is not the one executing the cooperative agreement, would most likely get their funds directly, i.e. they would also get their funds from NASA Headquarters, but only following successful negotiation and agreement that this is the project to be actually implemented as opposed to what was originally proffered.

I'll make one note regarding that, which I did not put in the -- which I did not put into this text, and that is that as it says in the Cooperative Agreement Notice, that it is not possible within a cooperative agreement proposal by a non-NASA organization to specify in detail how NASA will fulfill its commitments which are made through a letter of commitment, i.e. a letter of commitment was given to NASA -- to the offeror on the prospect of a proposal being written based on the overall plan, including that letter of commitment.

If there are equal facilities or equal individuals who might participate in the

collaborative R&D, or some different arrangement among NASA Field Centers for the implementation of that project, it's entirely at the discretion of NASA how the commitment is fulfilled. And that is something that's part of being a team, or cooperative R&D activity. So, there's no -- this goes in line, also, with the idea of not specifying an individual by name, saying I want 32 hours per week of Joe Smith. Well, you can't make -- that's not binding, it's not appropriate and it's not binding on the government.

What you need is to say I need 0.1 FTEs from your expertise in the following areas, preferably from an organization, to support me in this activity. And then it's up to NASA to fulfill its commitment if it signs a letter of commitment and determines specifically how it will do so.

I've got a couple of more that -- a couple of more that pertain to NASA Field Center participation, just to get them out on the table. Are there any questions regarding the

three topics we've just discussed? Please.

MR. KESSLER: Tom Kessler from Boeing. This question sounds really stupid to me, but maybe everybody else doesn't understand this either. You've earlier cited various numbers for the maximum proposal amount in various categories, A, B, and C, and one of them I recall is a million dollars in the HEART area that you would be submitting to HTCI funding, so we as a proposer may propose a million dollars worth of stick work on one of those and we want to have centers XYZ and ABC involved, and each of them just to take a number has, say, $300,000 for the work that we need to have done in executing the overall million dollars. Does that $300,000 count as part of the million dollar proposal; in other words, does that funding provided through this funding here, or is it provided outside of the million dollars which you are citing as the limit?

MR. MANKINS: It's not a bad question, because it's not always the same. In the case

of the HTCI Program, those resources in the case that you -- the example that you cite, hypothetically, $300,000, are part of the one million dollar cap. However, it should be noted that if, for example, it was a million dollar project, $700,000 of which were going to be with a for-profit organization, and $300,000 of which were going to be with the -- through the NASA reimbursed on their charges and so on, only the $700,000 would be subject to the cost sharing.

But the answer is, we're trying to create, in this case, a total number of projects, approximately 20, in scope, with an average value of $750K, including monies to all participants, external and internal.

MR. KESSLER: Okay. Follow-up question. You earlier as an aside mentioned the government civil servants are paid out of another bucket.

MR. MANKINS: Yes.

MR. KESSLER: So, if I'm looking for 100 hours out of Joe Schmoe from center ABC, and

maybe that's $50 an hour, I'm not sure what the rate is, that actually isn't cash that you have to fund, either through --

MR. MANKINS: The personal time of the individual and associated things like their benefits and so on, those are covered by another category of NASA appropriation, however all centers, like all organizations, have overhead, and so there may be overhead charges, they're called program support charges, which are associated with using that person, to that extent.

Suppose a typical overhead was $50,000 a year, and you wanted a person for half time, maybe the discussion would come out that an appropriate contribution charge would be $25,000. That's purely hypothetical, but there can be R&D costs associated even with civil servant time that would be allowable under the HTCI, and would have to come from the HTCI R&D funding.

MR. KESSLER: Okay.

MR. MANKINS: Even though the labor hours themselves were not charged to you or to me.

MR. KESSLER: I understand, thank you.

MR. MANKINS: Any other questions on the discussion we've been following the last couple of minutes?

(No response.)

MR. MANKINS: I'll jump ahead, then, to another one. Hypothetical Center XYZ, we've got groups here who have had preliminary informal discussions concerning possible collaboration with teams. To support this activity, can any of this money be used to support NASA contractor activities, for modeling, for example, organizational support costs or NASA travel for civil servants and so on and so on.

And the answer is, NASA collaborative activities, as part of non-NASA projects selected from the HTCI CAN, may receive funding, we just talked about that, with the following conditions: These resources could include

1 necessary charges, such as support costs or
2 costs for services provided by a supporting
3 contractor at the NASA Field Center.
4 For example, let's suppose that the
5 wind tunnel was going to be used at Ames, I'll
6 use Langley. I'm going to use a wind tunnel at
7 Langley, and operating the wind tunnel has some
8 charges associated with it, some of which are
9 direct, and some of which are indirect shares of
10 the overhead, like we've got 50 people who are
11 working on this, ten of them are civil servants,
12 40 of them are support service contractors,
13 you've got to pay your share of the overall
14 costs of using the facility. That's a
15 legitimate charge. However, this approach
16 cannot be used to circumvent the cost sharing
17 requirements levied on for-profit organizations.
18 For example, if the activity to be
19 undertaken is research and development, then the
20 for-profit -- such as modeling as a part of the
21 research, then it cannot be covered in this way,
22 i.e., the for-profit organization, even if they

happen to be a support contractor at the NASA Field Center, should propose as part of a team to work on the HTCI Program. They should not anticipate coming in through a separate vehicle and getting the money to do the R&D activity without being subject to the cost share stipulation.

And this of course comes with the caveats that we discussed a number of minutes ago regarding the fact that you can, of course, propose for less than the full 50 percent share if you justify appropriately and you're willing to take the risk of the additional evaluation and decision by the Associate Administrator for Procurement.

As mentioned previously, these fund resources will be transmitted directly from NASA Headquarters to the appropriate center, and would not flow through the outside organization of whatever type. It is anticipated that such resources would be indicated in the letter of commitment, I know some of this is redundant,

but I just thought it would be nice to hammer on some of these particular points that are important. And NASA travel for civil servants cannot be covered from NASA R&D money provided through this vehicle.

I would like to -- oh, sorry. Go ahead.

MR. BOYLE: My name is David Boyle from the Commercial Space Center for Engineering at Texas A&M, and John, I've got a few brief questions that aren't really related to that topic, but I'm running out of time with the airlines and they're not answered anywhere, so if you wouldn't mind.

MR. MANKINS: Certainly.

MR. BOYLE: You indicated, of course, that a team can propose for this, and I want to ask if one part of the time is a commercial industry and another part is a not for profit but state government agency, then if one of those needs to be the lead, does it make any difference in the evaluation criteria whether

it's the commercial company or the non-federal, but yet state government agency that is the lead?

MR. MANKINS: Understood. Under the policies of the HTCI Program, it makes no difference.

MR. BOYLE: You say that as if it doesn't make any difference under the policies but it might make a difference under the evaluation.

MR. MANKINS: No, what I was implying by that or meaning for you to infer is under other programs using cooperative agreements, it might make a difference, i.e. if the policies of HTCI were different and we were trying to emphasize building up university centers, we might prefer university PIs, or if we were interested in assuring strong commercialization, we might want to have consortia that were led by for-profit companies.

In the case of the HTCI, since neither of those is a particular policy objective, we

are neutral on the subject.

MR. BOYLE: Okay. The second question, on education and public outreach, I want to make sure I understand. I don't see education and public outreach anywhere in the initial criteria, and so I hope that means that the initial proposal is strictly done on its technical merit, we don't need to spend any time talking about E/PO, but we can expect to get your invitation to provide that if we make it.

MR. MANKINS: That's precisely correct.

MR. BOYLE: And a final point, getting again back to the team structure, if you have a not-for-profit and a commercial company teaming up and proposing, one of those will be in the lead, and if you award the contract, you'll award it to one of those two team members. That means if both team members are doing something with NASA money, one will have to subcontract to the other, I would think. And yet you say in here --

MR. MANKINS: A subcontractor

relationship is a different one than the one that is anticipated. If you -- if you're having subcontractor relationship, then, in fact, you are anticipated to be buying a good or a service from the for-profit entity if you as the university organization are the lead, and that they are not conducting research and development. If they are conducting research and development, then the -- it's not anticipated that it's a subcontract. It's anticipated that you will submit articles of collaboration identifying the creation of a consortium, and that you will stipulate in that -- those articles of collaboration the relationship between those two entities for the conduct of the project.

MR. BOYLE: And then in that case, NASA would have a contract -- offer agreement as a contract between NASA and --

MR. MANKINS: Not a contract, as a cooperative agreement.

MR. BOYLE: As a cooperative agreement

between NASA and the consortium, not between NASA and one of those two entities?

MR. MANKINS: Except that the principal investigator will be responsible, we would anticipate that the resources would flow only to the investigator at the lead organization, but it would be dependent on the particular case. But it is not anticipated that it would turn out to be a subcontractor relationship.

MR. BOYLE: But the reason that we spoke to the PI in one organization, and yet the other organization is also doing some work that requires some NASA money, there would be a -- have to be a relationship --

MR. MANKINS: Transfer of funds, that's right.

MR. BOYLE: That transfer the way it's done would be a subcontractor agreement, which is a contract, which would violate one of your rules that it's a subcontract.

MR. MANKINS: We don't say that you can't do subcontracting, what we say is that you

may subcontract for goods or services, but in the event that you create a -- you see, you're really creating a contract, you're not creating a subcontract.

MR. BOYLE: Okay.

MR. MANKINS: If the tran -- because there is no contract.

MR. BOYLE: Right, I see that.

MR. MANKINS: There's only a cooperative agreement. Let's suppose that the transfer of funds is done through a contract, one, the terms and conditions of that contract should be negotiated as part of the articles of collaboration, and two, the existence of that contract does not relieve the for-profit organization from its obligation to support the cost sharing requirement.

MR. BOYLE: Right. Absolutely. Okay, thanks.

MR. MANKINS: There's been a -- there has been a fair amount of cross talk over the last few weeks as people have anticipated this

coming out and as the informal conversations have taken place, about what is appropriate NASA involvement in proposal preparation, from a formal standpoint, and I thought I would go ahead and just delineate that.

Travel safely, Mark.

MR. SAUNDERS: Thank you, John.

MR. MANKINS: For the record. NASA can provide information about a center's capabilities. NASA can discuss potential collaborative research and development activities. NASA can edit specific and appropriate text to be included in the proposal, where, for example, it might be text that describes the center's capabilities, or which specifies the potential collaborative research and technology activity between the center and the offering organization.

The NASA personnel should not coach the offeror on how to change their proposed project to improve their chances of winning, the NASA person should not write the proposal.

A couple of side notes relating to this subject. Formal information and formal discussion should be handled through the designated HTCI field center point of contact. Notice the emphasis on the word formal, and collaborative means that a NASA Field Center works with the non-NASA principal investigator to better accomplish what the non-NASA principal investigator proposes to do, i.e., and this is in the nomenclature of the general counsel's office, the NASA participation should be in line with helping to better accomplish the idea that the non-NASA principal investigator brings forward. Not whispering behind the scenes to say come to me with this proposal and we'll take care of you in the evaluation process. That would not be a satisfactory formal relationship.

And now turning to a completely different subject. Any other questions or issues that you would like to discuss at this moment that relate to NASA Field Center participation?

MR. CASSAPAKIS: This is Costa Cassapakis again. John, I think it would be very helpful, just a statement, it's not a question, if you were to include in the comments next week some more information about how the NASA Center contribution is going to be evaluated and costed, because so far I think there has been a lot of confusion on the subject, and why I'm bringing it up, is because we don't have all that much time to prepare the proposals, and the costing is a very difficult issue, and we don't want to leave it for last, you know, I think it's going to take a lot of going back and forth between the for-profit organization and the NASA Center. And I think we would like to have a little more understanding on that.

MR. MANKINS: I will certainly try to provide you with some more insight. The general tenor is the one that I elaborated on earlier, namely that the -- in the letter of commitment from the NASA Field Center, there should be a

rough estimate of the total resources that would be needed to support the project in the way which is stipulated. That number is what should be included in the proposal, and if that number is not exactly right, it's not your fault.

But the specific number that results should be approximately the same as that number, and ultimately the total value of the project will be the total value of the project. And it's entirely possible for negotiations on the cooperative agreement to ultimately fail on some issue of intellectual property or roles and responsibilities among the members of the consortium and so on.

It has not been my experience that they typically fail because of the -- there's something egregiously wrong with the rough estimate of what the resources might be to be required for the NASA Field Center and what the responsibility of the NASA Field Center might be.

So, but I'll certainly talk to it more.

But once it comes to you in a letter of commitment, even if it ultimately is adjusted in the negotiation, and you enter that into the -- into your proposal, you decide to incorporate that activity and that estimate into your proposal, you're not personally accountable for the validity of the number.

MR. CASSAPAKIS: Okay. That helps.

MR. MANKINS: The organization that made the commitment to you is accountable for the validity of the number.

Another question that has been talked about is what about hardware? There are several bad examples where cooperative agreements with NASA have led to hardware and some disputation regarding the ownership of the hardware.

In particular, who owns any hardware that may result from a project created under the HTCI Cooperative Agreement Notice? The answer is as follows: The disposition of tangible and intangible assets resulting from a NASA cooperative agreement is governed by our

policies. This is just a legalistic statement, but it depends on what kind of organization you are and what kind of asset it is, whether it's intellectual property or hardware or software.

But in the case of a for-profit organization, if NASA funds are used to purchase and/or fabricate the hardware, then NASA would typically retain ownership of the hardware at the end of the project.

If industry cost share funds are used to purchase and/or fabricate the hardware, then the hardware should be specified as an in-kind contribution to the collaboration, and if it is, then the company would retain ownership at the end.

So, for example, if you anticipate buying a $25,000 lathe as a part of the project, and you can do it with company money, rather than using NASA money, if you buy the lathe with company money, I don't know if a lathe is an appropriate item for anybody's project, it's just hypothetical, it sounds less spurious than

the ham sandwich chamber I was talking about earlier, but if you buy that $25,000 lathe with company money, you can make that an in-kind contribution to the project from the company in which case it was purchased entirely with company resources and ownership is with the company.

In any event, the details of the disposition of tangible assets, eventually, should be specified in the cooperative agreement. There have been instances in the last five or six years where this was not the case.

The cooperative agreement did not specify what the approach would be for the disposition of tangible assets. And this has led to great legal difficulty. And so I would urge you all to plan to make some provision, one way or the other. For example, in the case where funds, resources or funds are mixed, i.e. there is a combination of NASA and non-NASA resources, that are used to create hardware,

either to fabricate it or cure it in some fashion, then the disposition might be in proportion to the relative contributions.

Each side is putting in 50 percent, as a result of the research and development project, two prototype articles are fabricated. Company XYZ keeps one of them, the government keeps one of them. Nice and clean. And all set up ahead of time in the cooperative agreement, no issues later that require legal department wrangling.

So, please think about it ahead of time. It is more difficult if you don't think about it and you end up in your plan producing a tank, one tank, rather than two copies, and then what do you do -- and it's co-funded, what do you do with a tank? This is a solomonic -- solomonic? -- type problem, and our legal system is not known for solving such problems.

Any questions regarding hardware or the disposition of hardware?

(No response.)

MR. MANKINS: It's already 4:00, see how the time flies. I am going to try to wrap up in a couple of minutes, I apologize for running a little over, but I think the questions have been good.

Trivia question, will the presentation material and questions and answers from this conference be posted, the answer is absolutely yes. They will be posted on the web next week.

Question: Are research -- and this is just one last one that sort of sneaked in under the wire so I stuck it onto the end, can research organizations that are largely funded by NASA bid to this CAN, i.e., are we biased against you if you get a substantial amount of money from NASA? And the answer is no, of course you can bid. We are not biased against you. So, the answer to the question is yes, you may bid.

Just to remind you, this was in the earlier package, I just thought I would repeat it here at the end. And if by some chance this

email -- this website should go down, please alert somebody, one of the points of contact in the program, immediately. John Nelson and Carl Gustafaro were telling me, they're from Peer Review Services, they were telling me that they were unaware that the site had a glitch, and so you folks were having some difficulty, but since nobody had told them, they didn't know they needed to fix it. So, please, if there is an issue, please immediately raise the flag with one of us and we will forward the issue and get it resolved promptly.

Again, my name is in there again. I thought I was obligated to put it in one more time. But more importantly, these are all the NASA Center points of contact to work with.

MR. SEIBOLD: Just an informal question, will today's attendance be posted?

MR. MANKINS: Yes, it will. Yes, it will.

UNIDENTIFIED AUDIENCE MEMBER: I didn't hear the question.

MR. MANKINS: There was an informal question that was asked by --

MR. SEIBOLD: Bob Seibold from Aerospace Corp. Will today's attendance be posted on the web.

MR. MANKINS: And the answer was yes, it will be.

MR. KESSLER: This is somewhat unrelated to the last question. John Kessler from Boeing again. You've indicated that we should include nonbinding estimates for the total value of a flight demonstration program, and there has been various numbers in the hundreds of millions of dollars for those flight demonstrations. Has the government given any consideration to -- you've categorized them by size, has the government given any consideration to how those contractual arrangements will be made in the later phases that may affect any work order magnitude estimate we put in?

MR. MANKINS: Right. The -- say that again. Say your last sentence again. I thought

I was with you right up until the last half a dozen words.

MR. KESSLER: Sorry. Has the government considered, have you given any consideration to what the further contractual arrangements would be beyond this current phase to execute those technology flight demonstrations, in other words, would they be --

MR. MANKINS: No, no, I understood that part. You stopped there. But then you said something about how that might affect the estimate.

MR. KESSLER: Well, yes. If you plan that the later contractual arrangements will be cooperative agreements, also, then that -- then that requires substantial company investment, that may affect it because it will affect rates for how it's done, things like that.

MR. MANKINS: What we have anticipated as of now is that any activity which is undertaken under the HEDS cooperative agreement, which is on the street now, basically is an end

unto itself. After 24 months, if it's a 24-month project, it is done. The -- any future activity, including the implementation of technology flight demonstrations that may be defined under the HTCI during the next year or two would be a separate solicitation. A separate competitive solicitation. And as such, I would suggest that the analysis of the concept and the cost should be to the extent possible general enough so that it does not come into issue with regard to, you know, is it -- yes, this is valid to, you know, 10 percent, but only if it's done through a procurement. If it's not done through a procurement, it needs to be different.

MR. KESSLER: You lost me on that last part.

MR. MANKINS: Yeah, I understand, I'm sort of drizzling out there. The answer is no with regard to a particular vehicle, I think the likelihood, this is only likelihood, not policy, the likelihood is that large-scale technology

flight demonstrations would be implemented in a manner analogous to the Discovery program or the New Millennium program, and hence it would likely be a NASA research announcement as opposed to a cooperative agreement notice.

MR. KESSLER: Thank you.

MR. MANKINS: This is not to say that experiments of all three sizes would be implemented using the same type of vehicle. If we had adequate funding, if we had $100 million in this Cooperative Agreement Notice, we might very well undertake the smaller-scale technology flight demos through the Cooperative Agreement Notice process.

MR. KESSLER: Thank you.

MR. MANKINS: As I mentioned earlier, my closing observation, before I reiterate my closing observation, we're about six minutes past time, are there any other questions that anyone would like answered immediately as opposed to simply writing up an ITBC and forwarding it for the record and for

consideration after the meeting?

(No response.)

MR. MANKINS: Seeing that everyone is exhausted by listening to me for three hours and five minutes, I will go ahead and just make my final note. All of the questions and answers which have been provided this afternoon are preliminary. The official answer to questions, and perhaps a better phrasing of the question will be provided on the Internet next week, after being vetted through the general counsel's office.

With that, if there are no other questions of any kind, I'll go ahead and close this conference. I would like to express my thanks to you for your interest in the HTCI, and I certainly look forward to working with you during the coming years. Thank you.

(Whereupon, at 4:10 p.m., the conference was concluded.)

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CERTIFICATE OF REPORTER

I, Sally Jo Bowling, do hereby certify that the foregoing proceedings were taken by me in stenotype and thereafter reduced to typewriting under my supervision; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were taken; and further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of the action.

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