

DISCUSSION CONCLUDING AAS 11-668

Near the conclusion of Daniel Gambis' presentation, Dennis McCarthy interjected that this was not an IERS questionnaire. McCarthy said this was Gambis' questionnaire; the IERS "had not backed" or sanctioned the questionnaire. Gambis clarified that the survey answers were not his, but came from users.

Tyson said that McCarthy's tone "implied that they wouldn't have backed it," to which McCarthy replied "that's correct." George Kaplan asked who McCarthy meant by "they." McCarthy replied "they" meant "the President [of the Directing Board] and head of the Central Bureau of the IERS," adding that "there was no consultation with the IERS before this questionnaire was sent out." Tyson noted that lack of consultation does not mean that the IERS wouldn't "back" the questionnaire. McCarthy added that they would not have accepted it having read the questionnaire.

Kaplan asked McCarthy, "isn't this the largest response anybody has ever gotten on this question? Over 400 is not a trivial response." McCarthy was not sure. Seaman asked why "they" would not have backed the phrasing of the questionnaire. McCarthy replied, "If you looked at the questionnaire you can see what the answer is supposed to be." Seidelmann said one might make the same claim against the questionnaires sent out by the ITU-R.^{1,2} Seaman said that Gambis' questionnaire language looked rather balanced, and wondered if McCarthy was saying that "they" would have backed a questionnaire worded the way "they" wanted. McCarthy replied, "This questionnaire does not supply information."

The discussion was halted so that Gambis could conclude his presentation. Gambis offered that, as the head of the Earth Orientation Center, he seemed best positioned within the IERS to conduct such a survey.* Additionally, the questionnaire records the direct responses of UTC users; the results therefore speak for themselves and are not supposed to represent the opinions of the IERS Directing Board. For this reason, an earlier 2002 survey was not coordinated with the IERS Directing Board either. John Seago asked Gambis if anyone from within the IERS had objected to the latest survey being conducted. Daniel Gambis said that the issue put on him was that it should be clear that the survey was conducted by Earth Orientation Center of the IERS and that the decision to conduct a survey was not made by the IERS, because the position of some members of the IERS Directing Board were completely different.

Seago said that it was unclear just how many surveys had been conducted on this topic, but a smattering of survey activity took place about a decade ago among various scientific groups. He said it was interesting that the ITU-R Special Rapporteur Group (SRG) was dismissive of that survey activity which suggested that UTC users were overwhelmingly satisfied with the *status quo*, instead reporting that these surveys "did not provide any clear resolution." Understanding

* *Editors' Note:* Daniel Gambis was the previous Director of the IERS Central Bureau and is a member of the IERS Directing Board.

that the SRG or any other ITU-R group could have conducted a more satisfactory survey at any time, Seago wondered why there had been no polling of end users by the ITU-R after so many years. Seago also wondered why simply *attempting* to gather feedback on end-user preferences now seemed to be a controversial activity. Gambis explained that a survey is not only a way to collect opinions, but it is a way to inform people and create awareness. Many people outside the IERS seemed to especially lack awareness of this issue. Gambis therefore thought that perhaps more time is needed before a decision is made. He is involved with a working group within the United Nations Educational, Scientific and Cultural Organization (UNESCO). UNESCO has many responsibilities and it would seem that they may have a stake in the issue of global time-keeping as well. Seidelmann added that the ITU-R Study Question explicitly asked for a determination of user requirements, but apparently that determination was never done.³

Seaman was surprised by the number of survey responses received (over 400), especially in relationship relative to the size of *Bulletin C* distribution list (about 1600). Gambis said that they were still receiving occasional responses to the survey, and mentioned that the day before he received very detailed correspondence from the English Royal Institute of Navigation (RIN). Seaman asked if there was any way to determine if a survey response came from a recipient of IERS products, to which Gambis said no. Frank Reed added that he knew ten people who responded to the survey who were not IERS product subscribers.

Steve Malys said that every survey he had seen on this issue—including an internal survey conducted within the US Department of Defense—had been characterized as being “informal”; that is, conducted by working level people and scientists who use the information. Malys was not aware of any surveys directed at decision makers who would be procuring the money necessary to affect changes to operational systems. Malys said answers will be different from working-level people versus those who control money and have to determine how much a proposed change will cost. Organizationally coordinated responses were not being requested, and different government agencies worldwide would likely to give different answers based on how these agencies use time and what the changes would cost. The informal nature of past surveys suggested that they are not being coordinated through any recognizable chain of command, and nobody seemed to be exploring questions related to cost.

McCarthy said that polling can be tricky and survey questions have to be carefully worded to elicit the desired information. He said that “we have done I don’t know how many surveys, formal or informal—I would call them all informal—and it is very difficult to get responses.” He said if the survey is “formal”, then it has to go up various chains of command and “it ends up being more trouble than it’s worth to even respond, so we don’t get responses.” Malys replied that if national decisions are to be made, then we want those decisions to be well coordinated. McCarthy replied that “the business of making surveys is not easy and you have to be careful when you do that. That’s the problem. That’s the problem with this [IERS Earth Orientation Center] survey and that’s the problem with every survey.” McCarthy said that perhaps the best survey he ever saw on this issue was the one commissioned through the American Astronomical Society.

Wolfgang Dick asked how the 2011 IERS Earth Orientation Center survey compared with the 2002 survey. Gambis said the number of people aware of this issue in 2002 was more limited. The number of responses in 2011 was greater and the percentage of responses from outside the IERS was greater. Seago noted that in the earlier survey 88% favored the status quo, whereas in the later survey 75% favored the status quo. McCarthy speculated that if the question were rephrased to ask “Were you satisfied if a change were made?” then such a phrasing would have also received the most favorable response. Gambis clarified that survey responders included comments, and the wording of the question does not change the detail of the comments. McCarthy

responded that a survey will get comments from both sides, but he learned that within the astronomical community it makes a difference regarding how the question is asked. Seidelmann thought that the difference with the astronomical community was that only a small percentage actually understood the difference between UT1 and UTC, but IERS product users should have a more inherent understanding of what the underlying issues are—why else would they be responding to an IERS survey? McCarthy thought we might not want to make that assumption. Seidelmann thought it should safe to assume that the IERS survey was targeting people who know what UT1 is. Reed said that the people responding to the survey didn't have to be involved with the IERS, adding that he knew people who responded to the survey who didn't know what UT1 was.

REFERENCES

¹ Timofeev, V. (2010), "Questionnaire on a draft revision of Recommendation ITU-R TF.460-6, Standard-frequency and time-signal emissions." ITU-R Administrative Circular CACE/516, July 28, 2010.

² Racey, F. (2011), "Questionnaire on a draft revision of Recommendation ITU-R TF.460-6, Standard-frequency and time-signal emissions." ITU-R Administrative Circular CACE/539, May 27, 2011.

³ Jones, R.W. (2001), Question ITU-R 236/7, "The Future of the UTC Time Scale." Annex I of ITU-R Administrative Circular CACE/212, March 7, 2001.