INTERNATIONAL COTTON ADVISORY COMMITTEE

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Report of the Fifth Meeting of the Task Force on Commercial Standardization of Instrument Testing of Cotton (CSITC) March 22, 2006, Bremen Germany

The 5th meeting of the Task Force (previously called an Expert Panel) on Commercial Standardization of Instrument Testing of Cotton (CSITC) was held in Bremen, Germany on March 22, 2006.

Andrew Macdonald, former President of the Liverpool Cotton Association, serves as Chair.
Zbigniew Rostwitalski, Vice President and Director of the Gdynia Cotton Association serves as Rapporteur.

Members present:
Romano Bonadei, Chairman of Filati Filartex in Italy
Lau Cheuk-Wai, Quality Control Department of Central Textiles in Hong Kong (replacing Alex Woo)
Darryl Earnest, Deputy Administrator, Cotton Program, USDA/AMS (replacing Norma McDill)
Bruno Widmer, Manager Cotton Department, SGS (representing Graham Fogg)
Jean-Paul Gourlot, CIRAD.
Axel Drieling, Testing Methods Department, Bremen Fibre Institute (replacing Axel Herrmann)
John Mitchell, President of the American Cotton Shippers Association (replacing Robert Weil)
Nayan Mirani, Khimji Visram & Sons, and Suresh Kotak, Kotak and Company (representing P.D. Patodia)
Joao Luiz Pessa, farm director of Fazenda Nova in Brazil
Anton Schenek, Chair, ITMF International Committee on Cotton Testing Methods
Ralph Schulzé, former executive director of the Australian Cotton Research & Development Corporation.
Peter Wakefield, Director, Wakefield Inspection Services

Members Absent:
Ibrahim Malloum, General Manager of Cotontchad and President of the African Cotton Association.

Observers present: Eric Hequet, A. Subramaniam, Hossein Ghorashi, Anja Schleth, Sandra Edalat-Pour, Lawrance Hunter, Hein Schroder, Hartmut Haid, A.H. AlLalit, Djibrilla Maiga, Jan Wellmann, Norma Keyes, Michael Watson, Dean Ethridge, Edelgard Baumann, Allen Terhaar, V. Srinivasan, Malgorzata Matusiak, Iwona Frydrych, Timothy Pearson, Daimon Jim Mwakyembe, Dominic Haynes Mwakangale, Yuen Hoi Lee, Arthur Aldcroft, Johanna Louwagie, Guntram Kugler, Urania Kechagia, Fred Shofner, Andrew Jordan, Devron Thibodeaux, Mona Qaud, Stuart Gordon, Allan Williams, Uwe Heitmann, Kadoglu Huseyin, Geoff Naylor, Gary Gamble, John Foulk, Alan Shirley, Neal Gillen.

Terry Townsend, executive director, and Rafiq Chaudhry, Head Technical Information Section, of ICAC served as Secretariat. James Knowlton, Chief, Standardization and Engineering Branch, USDA/AMS Cotton Program, attended as an official observer. Christian Schindler, Economist, ITMF, attended as an official observer.

The **Sixth Meeting of the CSITC** is confirmed for Sunday, September 10, 2006 in Goiania, Goias, Brazil.

The **Seventh Meeting of the CSITC** is tentatively scheduled for March 2007 in Zurich in coordination with a meeting of the International Textile Manufacturers Federation (ITMF) International Committee on Cotton Testing Methods. It was further suggested that the CSITC should conduct a session during the World Cotton Research Conference – 4 in Lubbock, Texas during September 2007.

Background: The Expert Panel on CSITC was formed in December 2003 on the instruction of the 62nd ICAC Plenary Meeting in Poland. There is a consensus that instrument testing of cotton is superior to

traditional hand classing. Instrument test results provide information to spinners that allow more efficient use of cotton, thereby enhancing demand. Instrument test results provide information to seed breeders, cotton producers and ginners, enabling the production of cotton with characteristics desired by the spinning industry. Instrument testing can also render the trading of cotton more efficient.

The objective of the Task Force is to facilitate widespread use of instrument testing systems at the producer level while upholding the standards and tolerances that maintain the integrity of high-quality testing. The Task Force is trying to facilitate the adoption of instrument testing standards and procedures utilized by the United States Department of Agriculture (USDA) by all testing centers around the world, and to introduce the use of instrument testing language in the trading of cotton so that traditional descriptions of grade or type are replaced with instrument test values.

There are 15 members of the panel representing both exporters and importers and all segments of the world cotton industry.

Previous meetings of the CSITC were held in Bremen in March 2004, in Mumbai in November 2004, in Memphis in June 2005 and in Liverpool in September 2005; a small-group meeting was held in Bremen in April 2005.

The Expert Panel issued two interim reports in 2004, including a report to the 63rd Plenary Meeting in India in November that identified seven actions to encourage worldwide testing of cotton with standardized instrument testing methods and procedures. The actions include 1) definition of specifications for cotton trading, 2) definition of international test rules, 3) implementation of test rules, 4) certification of testing test centers, 5) definition and provision of calibration standards, 6) specification of commercial control limits for trading and 7) the establishment of arbitration procedures. The report from the Expert Panel included specific actions and identifies responsible parties for the achievement of each recommendation.

During the small-group meeting in Bremen in April 2005 and during the 3rd Meeting in Memphis in June 2005, the seven recommendations and status of implementation were reviewed. During the 3rd Meeting in Memphis, the CSITC determined that the original tasks associated with diagnosis of problems and the development of recommendations had been achieved and that a new phase of work had begun with the implementing of proposals. Therefore, members of the CSITC agreed that the name of the panel should be changed to “Task Force” on CSITC to better describe its new role in facilitating the implementation of proposals.

During the 4th Meeting in Liverpool in September 2005, the CSITC discussed the results of a pilot round trial and considered how best to rate test centers. It was agreed at the 4th Meeting that the world cotton industry will not seek to establish an international testing center, and it was agreed that testing centers should be rated according to their performance relative to other participating testing centers in a series of CSITC Round Trials.

Cumulative CSITC Recommendations and Decisions

1. Definition of Specifications for cotton trading

During its 3rd Meeting, the Task Force confirmed that the characteristics recommended for inclusion in an instrument testing system at this time, and their definitions, are:

- Strength (grams/tex)
- Length (Upper Half Mean Length - expressed in inches and decimals, or in mms)
- Length uniformity (Index)
- Micronaire
- Color (Rd and +b)

The CSITC recommended during the 3rd Meeting that the criteria for certification of acceptable testing instruments be compliance with the Universal Calibration Standards (e.g. HVI-CCS and USDA Color Calibration Tiles) and appropriate parameters (e.g. UHML and UI).

There was a consensus to recommend that 100% of bales should be sampled in a standardized testing system, with the understanding that commercial agreements between buyer and seller may stipulate different sampling percentages. It was noted that module averaging and in-line gin sampling techniques are being evaluated. It was also noted that in many countries fewer than 100% of bales are sampled. The Task Force agreed that alternative sampling systems may prove to be effective, but there was agreement that 100% sampling is ideal and should be recommended.

The issue of trash measurement was discussed at the 3rd and 5th meetings. There was a consensus that current technology for measuring trash is not fast enough or repeatable enough to include in an international system at this time. It was recognized that a trash measurement should be added to the international instrument testing system as soon as an acceptable, reliable measurement system can be authenticated. USDA is currently addressing this issue, and color standards are already established based on current methods for testing samples with trash. It was noted that trash measurements are very much a part of commercial operations and it is regrettable that an instrument-derived trash measurement is not available at this time. The Task Force does not wish to imply that trash is not a commercial consideration, only that a practical instrument measurement is not available at this time.

It was noted that the ITMF International Committee on Cotton Testing Methods had been discussing the issue of adjusting color measurements for trash content at length, and there was a consensus in the CSITC to encourage ITMF to develop practical recommendations regarding the adjustment of color measurements for trash content.

There were also expressions of interest during the 5th Meeting to explore ways to adjust length and strength measurements based on the moisture content of samples. This issue was recognized as important, and the ITMF was asked to explore whether the tolerances for moisture in samples should be changed based on latest developments in testing technology.

The separate issue of excess moisture in bales was discussed during the 5th Meeting. Members of the CSITC noted that the problem arose from the addition of water to bales by gins seeking to increase the weight of bales. It was noted that systems at gins that add water to bales, rather than systems that allow cotton to absorb moisture within a humid environment, can lead to quality deterioration, including spotting and Cavitoma. It was noted that the problem might expand as instrument testing becomes more common and the interval between testing and use increases for cotton from more origins. It was suggested that the matter could be a subject for further discussion at the plenary meeting in Brazil with a view toward developing an international standard for moisture in bales.

Other specific instrument measurements, including those for neps, short fiber, fineness/maturity, and stickiness, are currently under research development for SITC instrumentation. Members of the CSITC noted during the 4th and 5th meetings the importance of including these measurements in an international instrument testing system. However, it was noted that the technology for testing these parameters is not fast enough or repeatable enough at this time. Therefore, the CSITC agreed that the inclusion of these parameters could be considered during a second stage of CSITC development, after technical developments by the instrument manufacturers make high volume testing possible.

There was also concern expressed during the 4th Meeting about the need to recognize differences between handpicked and machine picked cotton. However, there was agreement that the concern of the CSITC was to ensure uniformity between instrument results in different locations, and not to try and differentiate between cottons of different origins. While the importance of harvesting method is recognized in cotton marketing, it was agreed that the harvesting method is not a factor in instrument testing.

The recommendations of the CSITC pertain to upland cotton varieties, accounting for 96% of world cotton production. The applicability of CSITC recommendations to barbadense varieties will be evaluated during future CSITC meetings.

The CSITC noted that different methods of drawing samples will result in different instrument test results, and therefore a standard procedure for drawing samples for the standard operation of instrument tests should be agreed. At its 3rd Meeting, the CSITC accepted the guidelines for sampling at origin prepared by Wakefield and SGS. During the 4th Meeting, the CSITC reviewed additional comments from Wakefield and SGS regarding sampling:

> The eventual aim for all pre-shipment and post-landed arbitration sampling is based on 100% sampling, with samples being drawn as follows: Remove 1 or 2 bands/wires from near the center of the bale. After removing the bands/wires, using a knife, cut the covers to expose the surface of the bale. Dig into the layers of cotton with fingers and draw them across the bale in a rolling motion, removing a large flake of approximately 100 grams. This should be repeated on the other side of the bale, giving a total sample weight for each bale of approximately 200 grams. When sampling, ensure that the outer layer of cotton is removed, as this layer may be dirty. A tag or ticket showing the bale number and any other pertinent information should be inserted between the two flakes of cotton, and the samples should be wrapped in heavy paper, marked on the outside with the Mark/Quantity/Etc. Samples are normally parceled up to 20/25 per paper. Always ensure that sampling procedures and time limits are carried out in strict accordance with the contract and rules governing the sale and/or purchase.

There were concerns about the recommendation to remove bands/wires prior to use, and Wakefield and SGS have provided additional information that will be considered during the 6th CSITC meeting[1].

EICA Views & Suggestions

During the 4th Meeting of the CSITC, a paper was presented by the East India Cotton Association (EICA) giving their Views and Suggestions on the Report of the CSITC. The EICA recommended that USDA standards and procedures should be used as one reference, but that international standards should also use the standards and procedures in vogue in other countries. Among other suggestions, EICA recommended that strength be measured on high volume instruments based on 1/8" gauge, Stelometer. The CSITC noted that the use of 1/8" Stelometer seemed to be outdated. It was noted that USDA has discontinued the production of international calibration cottons based on Stelometer measures and that the world now uses HVI calibration cottons. It was also noted that the U.S., China (Mainland), Brazil and other major trading countries are adopting the Universal Cotton Standards as the basis for instrument testing. The CSITC agreed that the suggestion to use the 1/8" Stelometer measurement for strength could be referred to the ITMF Committee on Cotton Testing Methods. The CSITC also affirmed that all measurements must be based on calibration material in compliance with Universal Calibration Standard material.

The EICA noted that color measurements are affected by the trash content of samples and whether cotton has been roller ginned or saw ginned. Members of the CSITC agreed that the accuracy of Rd and +b values is affected by the reflectance of trash in samples. However, it was noted that the purpose of the CSITC is to standardize test results on machines in different locations and test results would be interpreted by market participants based on variety and origin. Therefore, separate standards for saw ginned and roller-ginned cotton were not needed, and since trash levels are included in the description of cotton, this also could be considered by market participants when values of cotton are negotiated. The CSITC affirmed that at this time color measurements will be based on the given Rd and +b measurements, but the CSITC acknowledges that it would be beneficial to develop tests that can exclude the impacts of trash on reflectance in cotton color measurements.

Regarding Sampling, the EICA reported that practical problems in India will cause difficulties in implementing a 100% sampling system and that India recommended 4% sampling to begin. The CSITC noted that the recommendation of 100% sampling was based on ideal conditions, and countries would implement the recommendation based on their own situations.

2. Definition of international test rules

It was agreed at the 4th meeting that one purpose of a round trial is to give testing centers the information needed to improve performance. It was further agreed that the following steps should be followed for the certification of test centers**:**

(1) Define rules for an adequate CSITC Round Trial system.
(2) Define test center limits of acceptance for the assessment of the CSITC Round Trial individual results.

[1] General Sampling Observations provided by SGS and Wakefield.

(3) Define rules and procedures for the certification of the test centers based on the total performance of the test centers during the certification period.

One question is whether samples should be submitted by testing centers with test results, or whether a Round Trial should be conducted using samples of known values and variability provided to each test center. It was determined at the 4th meeting that the best initial approach is to conduct a CSITC Round Trial with samples provided to test centers to provide a constant level of testing.

CSITC Pilot Round Trial

It was reported at the Third Meeting that the accuracy of data given by the USDA HVI Check test or the Bremen Round Trial are not comprehensive enough for fixing test center limits of acceptance and the rules for the certification of test centers. In response, USDA and Bremen agreed during the 3rd CSITC Meeting to jointly design and conduct a special Pilot Round Test among approximately 30 participating test centers, and from this information to develop recommendations for certification rules and tolerances.

During the 4th Meeting, James Knowlton of USDA, AMS, Cotton Program and Axel Drieling of the Bremen Fiber Institute reviewed the CSITC Pilot Round Trial procedure. The Pilot Round Trial was completed in early September 2005 by 31 volunteer test centers from Belgium, France, Germany, Greece, Latvia, Poland, Switzerland, UK, USA, Brazil, India, Australia, and Benin. Appreciation was expressed to these labs for their promptness in performing the tests within a short time frame. Knowlton explained that the Pilot Round Trial served as a “dry run” to refine procedures and to serve as a basis for determining testing tolerances for future Round Trials.

Knowlton further explained that samples for the Pilot Round Trial were drawn from 4 cotton bales previously tested and approved in USDA’s calibration cotton value setting procedure, thereby assuring that the bales have highly uniform measurement properties. Three of the cottons were U.S. saw-ginned upland and one was a carded, roller ginned, American Pima (ELS) cotton. It was mentioned that future round tests would probably not utilize ELS type cottons since CSITC was focused on Upland cotton varieties. Sample sets were distributed to over 30 participants for instrument testing to obtain CSITC measurement results. Testing of samples was performed over a 5-day testing period in order to provide assessment of both accuracy and precision (accuracy being defined as the degree of closeness an instrument is to the average value of all participants and precision being defined in terms of the variability of instrument results on tested cottons).

Axel Drieling presented results of the CSITC Pilot Round Trial at the 4th Meeting in Liverpool. He handed out copies of his analysis that provided means, standard deviations, CV’s, distributions, ratings and rankings. The identity of individual labs was kept confidential in the analyses, but the participants in the CSITC Round Trial received individualized copies of their own results relative to the overall results.

Survey of a System of Test Center Evaluation

Based on the results of the CSITC Pilot Round Trial, a survey of CSITC members and observers was distributed by the Secretariat between the 4th and 5th meetings. Three systems of test center evaluation were suggested:

Evaluation system number 1 counted the results exceeding the allowed limits for each test, but no further assessment of the difference between the result and the inter-laboratory mean was included.

Evaluation system number 2 accounted for the relative distance to the inter-laboratory mean, without considering the allowed limits of acceptance.

Evaluation system number 3 accounted for the relative distance to the inter-laboratory mean as soon as the allowed limit of acceptance was exceeded.

Members of the Task Force and Observers were asked to respond to four questions:

1) Which of the three systems of evaluation do you prefer No. 1, 2 or 3? Seven Members and four Observers (11 total) favored system 2; three Members and two Observers (5 total) favored system 3.

2) Should we be looking for an overall evaluation level being an average of the grades of all the various measurements? (yes or no) Eight Members and five Observers (13 total) answered yes; two Members and one Observer (3 total) indicated that full results need to be provided.

3) Or, do you feel that each characteristic should be evaluated individually for each laboratory? (yes or no) Six Members but only two Observers (8 total) indicated no; four Members and four Observers (8 total) indicated yes.

4) Should the evaluation eventually depend on the accuracy of the results, as in the attached spreadsheet, i.e. the difference in measurement level, or should the precision also be included in the overall evaluation system? (yes, no, or for information purposes, the latter since the reliability of such information is virtually impossible to verify). Nine Members and six Observers (15 total) indicated that accuracy is paramount and information on precision should be supplied for information purposes only; one Member and no Observers indicated that evaluation should be based on precision.

Rating of Test Centers

Based on the results of the survey, there was a consensus at the 5th Meeting in Bremen that evaluation system number 2 would be accepted as the basis for CSITC test center evaluations. It was further agreed that an overall evaluation for each test center will be published based on an average performance on the six CSITC measurements, and that individual results will be reported privately for each measurement to testing centers. It was agreed that the evaluation of test centers should depend on the accuracy of results, but that information about precision will be provided to each test center.

It was agreed at the 4th Meeting of the Task Force that there will not be an international testing center.

It was emphasized that a test center rating system would demonstrate the capability of test centers to meet recommended standards, but certification could not guarantee the accuracy of individual tests.

The CSITC decided at the 4th Meeting that the cotton industry will not develop a system of auditing the performances of individual testing centers for compliance with the procedures required in the Universal Cotton Standards, but that test centers will be rated according to their performance in Round Trials. The CSITC agreed that test center grades or rankings will not be dependent on the instruments being used in testing; rankings will be determined by testing results. Provided that a test center is capable of testing on a correct level, test results will be accepted.

CSITC Round Trial

A procedure was agreed at the 5th Meeting for the conduct of International CSITC Round Trials. The procedure comprises:

A. The Round Trial

A.1. The Round Trial will be conducted 4 times a year.

A.2. Round Trial testing will be for multiple days to enable reliable evaluation of accuracy and precision.

A.3. Each test will consist of
- one measurement for micronaire,
- two measurements for length/strength
- and two measurements for colour

A.4. The same number of tests will be done for each cotton, and 6 tests will be done each day.

A.5. The same number of tests will be done each day of testing, and the number of days will be 5.

Test Scheme

	Cotton 1	Cotton 2	Cotton 3	Cotton 4		*Cotton 5?*
day 1	6 tests	6 tests	6 tests	6 tests		*6 tests ?*
day 2	6 tests	6 tests	6 tests	6 tests		*6 tests ?*
day 3	6 tests	6 tests	6 tests	6 tests		*6 tests ?*
day 4	6 tests	6 tests	6 tests	6 tests		*6 tests ?*
day 5	6 tests	6 tests	6 tests	6 tests		*6 tests ?*
Sub Total	30 tests	30 tests	30 tests	30 tests		*30 tests ?*
Total	120 to 150 tests for each Round Trial					

A.6. Each laboratory will test 4 cottons; each sample will be well pre-tested for homogeneity (see B.4). These cottons will not include different processing or extremely different properties (like ELS) than the usual USDA upland cottons and their preparation, although other origins might be included.

A.7. There will be an opportunity to take a 5th cotton in the round trial, e.g. with different processing or different behaviour. This cotton will not be taken for the evaluation of laboratories, but for the overall evaluation of laboratory performance on different kinds of cotton samples.

A.8. Laboratories will be asked to report the typical variability of their boundary conditions: testing on different days, at different times (morning, afternoon), and testing on different days with instrument calibrations in-between.

A.9. Testing should be done for all six properties (micronaire, strength, length, length uniformity, colour Rd, colour +b). If a laboratory does not have the ability to test all properties, then the evaluation will be done based on the given measurements. The evaluation certificate given to laboratories will indicate the number of properties tested.

A.10. All laboratories will be asked to answer specific questions related to their testing
- testing instrument
  e.g. type, model, year of manufacture, type of comb preparation, software version, and moisture correction capability and use
- conditioning
  e.g. normal/rapid conditioning, hours of conditioning, room construction details
- accreditation/certification
  e.g. according to ISO 17025
- standard material for calibration
  type, manufacturer, date of acquisition / expiry date, identification number, for micronaire cottons, Length/Strength cottons and Colour Standard Tiles
- actual climate during testing
  temperature and humidity of each day during testing

A.11. Details for testing:
- The laboratories will be asked to strictly follow the Round Trial procedure.
- The testing laboratories should adhere to accepted industry practices as established in the ASTM Standard Test Method, the USDA's publication "Guidelines for HVI Testing" and/or the ITMF "HVI User Guide".
- The selected instruments for the procedure shall be calibrated with USDA Universal Short and Long cottons, USDA Universal Micronaire cottons, and USDA colour tiles.
- For the evaluation, <u>all tests</u> have to be done by the laboratories.
- The number of tests by the laboratories has to be limited to the required number of tests to avoid a bias in evaluation.

At its 3rd Meeting, the CSITC discussed the possibility of sending different samples to each testing facility in order to reduce opportunities for collusion among test centers. This proposal will be considered at a future meeting after results have been obtained from enough test centers to provide baseline data.

B. Evaluation

B.1. For the official evaluation of the laboratories, only accuracy will be evaluated at first.

B.2. For each cotton, the average result of all tests for all days (30) of each laboratory is taken for the evaluation of accuracy.

B.3. The evaluation system accounts for the relative distance to the inter-laboratory mean result (see below), without considering any allowed limits of acceptance ("evaluation system no.2" mentioned in the December information/questionnaire).

B.4. Evaluation of the laboratory results will be done in comparison to the inter-laboratory average. For information purposes, the estimated value from USDA (for U.S. cottons) or collective work of USDA/FIBRE/CIRAD/additional labs for other cottons can also be given. If not enough laboratories participate in a particular Round Trial, the estimated values will be used instead of or in addition to the inter-laboratory average. The minimum number of participating laboratories will be 20. It was noted that the inter-laboratory average of test results is expected to be essentially equal to the known values for each cotton because the samples sent to testing centers will have been extensively pre-tested for homogeneity. If this proves not to be the case, then additional research will be necessary to determine why.

B.5. For the inter-laboratory average, a 90% trimmed mean will be taken, as it is simple, easy to understand and well accepted. A 90% trimmed mean removes the highest 5% and lowest 5% of the individual measurements.

B.6. The laboratory evaluation will start with a quantitative number (a rating). The rating will be calculated as a weighted average performance on each test over five days, and each of the six tests (length, strength, length uniformity, micronaire, +b and Rd) will be given an equal weight, at least at the beginning. For laboratory comparison, the distribution of evaluations of all labs will have to be published.

B.7. The quantitative evaluation data might, in the long term, be used to achieve qualitative (a ranking) results.

C. Presentation of Evaluation Results

C.1. It was agreed at the 5th Meeting that there will be three levels of publication and information release.

C.1.1. For the broader cotton industry and the public:
The CSITC will publish an overview of the Round Trial results (distribution of test results and an overall statement about accuracy and precision) – this will show the status of CSITC testing reliability to the public. The results from individual laboratories will be published with the identities of each test center withheld. Information on the variability between laboratories and the average variability within laboratories will be published.

C.1.2. For each laboratory to demonstrate their proficiency to their customers as they so determine:
Simple, easily understandable data for the public evaluation of the laboratories. This information will be accompanied by a certificate of the date of testing and information about testing history.

C.1.3. For each laboratory to enhance their test reliability, but not to release:
Detailed data provided confidentially for the benefit of the laboratories to enhance test reliability.

C.2. Content of the presentation of the results to the public: only anonymized information

- Table with the evaluation of all laboratories (anonymized)
- Statistics for the evaluation of all laboratories, distribution diagrams of the evaluations

- Statistics and distribution of the results between the laboratories (based on 5x6 tests for each cotton for all laboratories)
- Statistics and distribution of the in-laboratory deviations (based on 5 days of testing for each cotton in each laboratory)
- Statistics and distribution of the deviations between single tests
- The results from testing centers that do not participate in all six tests will still be included in the summary results provided to the public; the public will be informed about which tests each laboratory participated in.
- The results of all laboratories that participate in each Round Trial will be included in the information provided to the public, including the results from low-performing laboratories. By showing how test results are distributed, it will be possible to evaluate the overall performance of individual laboratories.

C.3. Content of the presentation for each laboratory to demonstrate their proficiency to their customers

C.3.1. An evaluation result for the average of all days and all 6 properties
- Example: a single number like "0.40"

C.3.2. A separate evaluation result, not to be confused with the overall evaluation, for the average of all days for each property
- Example: a single number like "0.49" for each property
  - Micronaire: 0.51
  - Strength: 0.32
  - Length: 0.39
  - Length Uniformity: 0.24
  - Colour Rd: 0.44
  - Colour +b: 0.49

C.3.3. All evaluation data will be given in comparison to the distribution of all laboratories to allow a comparison between laboratories

C.3.4. Information about the history of the evaluation for the previous Round Trials
- e.g. as a chart with the years/Round Trials as x-axis
- or as a handicap / gliding average

C.4. Content of the confidential presentation for each laboratory to enhance their test reliability
- All evaluation data will be given in comparison to the distribution of all laboratories
- The information should be as detailed as possible to allow individual evaluation and interpretation for the aim of enhancing test reliability
- Evaluation of the deviations in the results of each single day and each cotton
- Evaluation of the systematic influences on the results depending on the range of the properties ("trend")
- Information about the precision of the results
  - variability between single test results on the single days
  - variability between the averages of the different days
  - combined variability between single test results of all days
- Other information as needed

It was agreed that USDA and Bremen would conduct a Second Pilot Round Trial in May and June 2006 to gather additional information for use in evaluating test center performances.

It is envisioned that the first official CSITC Round Trial will be conducted during the 4th quarter of 2006, and that quarterly CSITC Round Trials will be conducted thereafter. Bremen and USDA will evaluate Round Trial results. Quarterly CSITC Round Trials as described above will be conducted among participating test centers that wish international certification.

3. Implementation of the test rules

It was agreed that the implementation of test rules would be covered under item 4 of the action plan as part of the certification process.

4. Rules for certification of test centers

It was agreed during the 3rd Meeting of the CSITC that, at least initially, ICAC through its CSITC Task Force would serve an oversight role to establish certification standards and compliance requirements for test centers, and that the functions of coordination among test centers would be delegated to existing institutions.

The structure of similar activities in the international wool industry was discussed during the small-group meeting in Bremen, and it was noted that to adapt this model, would necessitate the creation of new international bodies. However the consensus view was that this was not desirable, and that the international cotton industry should use existing structures to oversee, coordinate and implement internationally standardized instrument testing.

It was noted during the 5th Meeting that the Task Force on CSITC is established by governments and serves as the official entity in the world for assuming the tasks associated with its objectives of facilitating the adoption of high quality instrument testing at the producer level within a standardized world system. Accordingly, it was agreed that the mandate of the Task Force includes authority to certify test center rankings or grades as determined by the Task Force itself.

The CSITC is investigating a proposal to establish a committee directly accountable to the ICAC. The oversight committee would consist of several core members representing ITMF, ICA, USDA and the Bremen Fiber Institute, and other members would be chosen by the ICAC to ensure geographic and sectoral representation. USDA and Bremen would work collaboratively to coordinate relevant instrument testing on behalf of the CSITC.

There was a consensus of the CSITC that the Secretariat should work with USDA, Bremen and Ralph Schulzé to continue investigating the establishment of such an oversight committee under the auspices of the ICAC.

It was agreed that discussion of giving additional support to test centers to enhance the quality of their performances and the practicality of integrating ISO, or ISO-like principles, and the auditing of operational procedures into an overall certification system would be deferred pending the initiation of CSITC Round Trials. The CSITC encourages regional efforts to enhance the quality of test center performances.

Members of the CSITC noted the expressions of concern at the plenary meetings in Mumbai and Liverpool about the costs of participation in a standardized international testing system. The CSITC heard from the Secretariat that a survey of costs of instrument testing, including purchase, maintenance and operation costs, will be undertaken. Results from the survey will be used to better understand the structure and level of instrument testing costs in order to serve as a basis for future recommendations on how to reduce costs.

5. Development of calibration cottons

The CSITC noted that USDA recently expanded warehouse capacity and has the ability to provide calibration cottons to the world industry for at least the next several years. The CSITC agrees that the Universal HVI Calibration Standards for all six measurement parameters (length, length uniformity, strength, micronaire, Rd, +b) are the official standard of the CSITC.

It was reported that Chinese authorities have indicated that they will eventually develop their own domestic calibration cottons, but they agree in principle to the importance of maintaining a single world reference standard for calibration cottons based on the Universal Standards prepared by USDA. USDA plans to establish a standard for value setting of calibration materials under the American Society for Testing Materials International (ASTM) to cover the procedures used by USDA in creating calibration standards. The CSITC agreed that calibration standards must be referenced to the USDA reference material.

The CSITC agreed that calibration cottons should have an expiration date (e.g. 2 years), and in the longer term should comply with ISO Standard 17025 requirements, (e.g. statement of measurement uncertainty).

During the 4th Meeting, the EICA reported that the Indian research organization, CIRCOT, is a supplier of both HVI and International calibration cottons to users in India, Pakistan, Bangladesh and Nepal, and that CIRCOT intends to supply calibration cottons to test centers around the world in collaboration with other institutions. The EICA felt that the supply of calibration cottons should not be monopolized. Members of

the CSITC emphasized the need to ensure that calibration standards are based on USDA reference material to ensure uniformity.

6. Specifying commercial tolerances for trading

The CSITC recognized that commercial tolerances for trading are a different concept to the test center limits of acceptance mentioned in action item 2. In general, commercial tolerances for trading cotton might be broader and less rigorous than the tolerances agreed for certification of test centers. Variations in test results occur because of natural variations within cotton samples as well as variations in test center methods and procedures, and the CSITC recognizes that tolerances in test results exist, even between results provided by well-run test centers. There are three sources of variation in test results to consider:

1) the variation in results when the same sample is tested on the same instrument (repeatability),
2) the variation in results when similar pre-tested samples are tested on different instruments in different locations within the variances of climatic conditions permitted under accepted testing procedures (CSITC Round Trials), and
3) the variation in test results when different samples drawn from the same bale are tested (natural variation of cotton within a given bale).

Note: trading tolerances would include all three potential sources of variation in test results.

CSITC members also recognized that a proliferation of test centers providing results of diminished accuracy could undermine the value of instrument testing.

However, it was also recognized that trading tolerances are highly situational specific depending on end use, type of spinning equipment and the origin of cotton, and no recommendations for trading tolerances could be provided by the CSITC. Trade tolerances are to be negotiated between buyers and sellers on a trade-by-trade basis. Accordingly, in lieu of recommendations, the CSITC asked the Secretariat to work with USDA and Bremen to publicize the results of the Pilot Round Trial so that the variances in tests among well-run test centers can be widely understood within the cotton trade. The knowledge of such variances, combined with information about the variability of test results themselves, could then serve as the basis for negotiation of contracts for trade in cotton.

7. Arbitration procedures

The CSITC received a proposal at its 3rd Meeting on Instrument Testing Arbitration Procedures that had been prepared by the Gdynia Cotton Association and the Bremen Baumwollborse. The CSITC agreed to give tentative approval to the proposal. The proposal, with certain modifications, was circulated by the Secretariat to the CSITC and to the member associations of CICCA for their consideration. However, the CSITC emphasized that the rules for testing need to be introduced into international cotton contracts to allow disputes to be settled even if tolerances have not yet been introduced in such rules. Additional discussion will ensue at a future CSITC meeting.

Report on a Project Funded by the Common Fund for Commodities

During the 5th Meeting of the Task Force, Axel Drieling presented a summary of a project proposal that had been presented to the Common Fund for Commodities (CFC) in November 2005. The title of the project is "*Commercial standardization of instrument testing of cotton for the cotton producing developing countries in Africa."* Faserinstitut Bremen and Jean-Paul Gourlot from CIRAC prepared the proposal. This proposal was designed to cover the effective construction of the overall CSITC system and its operating structures for the future.

The project includes two major objectives. The first objective includes activities that are necessary to improve the commercial acceptance of instrument testing; this objective directly supports the work of the CSITC that were approved during the 2nd meeting in Mumbai in 2004. The second and core objective focuses on the support of African cotton testing laboratories so that they will be able to fulfill the international requirements for reliable instrument testing of cotton. This will be done mainly through the installation and support of two Regional Technical Centres (RTCs) in Africa.

The activities of the planned Regional Technical Centres include

- Reference activities to prove the reliability of test results
  - Re-tests of samples tested in the laboratories
  - Regional round trials
  - Support for participation in international check/evaluation programs
- Provision of information
  - Exemplary laboratory
  - Training
  - Experience and expertise
  - Collection and dissemination of technical information
  - Fostering of the cooperation between concerned partners in the region
- Capacity for additional instrumental testing for the regional cotton production

Based on the finished CFC/ICAC Fast Track project (CFC/ICAC/30FT) and the defined prerequisites, the following regions and partners were chosen for the Regional Technical Centres:

- West Africa: CERFITEX in Mali with the support of SOFITEX in Burkina Faso
- East Africa: The Tanzania Bureau of Standards (TBS) with the support of the Tanzania Cotton Lint and Seed Board (TCLSB), both in Dar es Salaam, Tanzania

The proposal was approved by the CFC, and is scheduled to start at the end of 2006 contingent on formal announcement of EC co-financing. The total project costs will be approx $7.8 million, with a total funding of approximately $5 million. Faserinstitut will act as the Project Executing Agency. The full proposal can be found at http://www.icac.org/csitc/english.html.

Attachments are available on the web at www.icac.org/instrument testing/documents:

Att 1. Sampling Guidelines prepared by Peter Wakefield and Bruno Widmer
Att 2. General Sampling Observations prepared by Peter Wakefield and Bruno Widmer
Att 3. Instrument Testing Arbitration Procedures proposed by GCA and BBB
Att 4. Views & Suggestions of East India Cotton Association