

## **Fisheries Technology Committee (B)**

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2005/2/FTC01 The **Working Group on Fisheries Acoustics, Science and Technology** [WGFAST]  
(Chair: David A. Demer, USA) will meet in Hobart, Tasmania from 27–30 March 2006 to:

- a) Examine works in the following research areas:
  - i) Fish behaviour in response to noise and other vessel related stimuli;
  - ii) Survey techniques for epi-benthic, epi-pelagic and shallow water species;
  - iii) Acoustical species ID techniques for multi-species assessments, ecosystem studies, by-catch reduction, and objective and automated data processing;
  - iv) Instrumentation, survey design, and data analysis techniques for studying aquatic ecosystems, with special attention to the estimation and use of measurement uncertainty in statistical analyses of multi-variate time series, and techniques for integrating multi-disciplinary data to elucidate functional relationships; and
  - v) Target strength (modelling and measurements);
  - vi) Given that numbers of noise reduced vessels have been deployed, WGFAST should review the procedures and practice of noise specification on active research vessels. The review should consider the archival of existing noise specs and their acquisition parameters. Recommendation for future action should be made on the basis of this review.
- b) Review the reports of the:
  - i) Planning Group on the HAC (PGHAC) common data exchange format;
  - ii) Study Group on Baltic Herring TS (SGTSEB);
  - iii) Study Group on Acoustic Seabed Classification (SGASC); and
  - iv) Study Group on Collection of Acoustic data from Fishing Vessels (SGAFV);
  - v) evaluate a report from a Task Force lead by David Somerton, USA to give the state-of-the-art in optical imaging and analysis technologies and define the ICES community's requirements for additional optical technology.

WGFAST will report by 1 May 2006 for the attention of the Fisheries Technology Committee.

## Supporting Information

Priority:	Fisheries acoustics is a vital area of fish stock management and ecosystem research
Scientific Justification and relation to Action Plan:	<p>Action Item 1.10, 1.13.1, 1.13.4, 5.4– a(i)  Action Item 1.10, 1.13.4, 1.14, 1.12 – a(ii)  Action Item 1.12.5, 1.14, 1.13.5– a(iii)  Action item 1.12.5, 1.13.4 – a(iv)  Action item 1.12.5 – b</p> <p><b>Term of Reference a-i)</b> Several ICES member countries have built noise-reduced fisheries research vessels in the last few years. The noise characteristics sought for these new vessels were those recommended by WGFAST in the <i>ICES Cooperative Research Report</i> No. 209. While quiet vessels have many advantages, there is some indication that some fish species may react to quiet vessels in some situations. Therefore, it is prudent to explore fish behaviour in response to noise and other vessel related stimuli. This broad topic includes other observation platforms, tools to measure vessel noise patterns, a review of fish hearing and fish reaction to ultrasound and infrasound, light, particle motion, and other stimuli. A.N. #s:</p> <p><b>Term of Reference a-ii)</b> Increasingly, many ICES member countries are challenged to survey epi-benthic, epi-pelagic and shallow water species. Many new platforms, instruments, and techniques are being developed and employed. Several members invest considerable research effort in this area. This will be the opportunity to exchange results, consolidate findings and identify further research needs. A.N. #s:</p> <p><b>Term of Reference a-iii)</b> Acoustical species ID techniques. The recent change to incorporate the ecosystem approach in fisheries management requires collecting data on several components of the ecosystem, multiple species and trophic levels. Acoustics is a unique non-selective and non-intrusive tool that can provide multi-species assessments. This topic is to review the present uses of acoustics for multi-species assessments, ecosystem studies, by-catch reduction, and objective and automated data processing. The incorporation of automated techniques for data gathering and processing, from various acquisition platforms, as well as methods for validation are part of this topic. A.N. #s:</p> <p><b>Term of Reference a-iv)</b> Instrumentation, survey design, and data analysis techniques for studying aquatic ecosystems will be discussed, with special attention to the estimation and use of measurement uncertainty in statistical analyses of multi-variate time series, and techniques for integrating multi-disciplinary data to elucidate functional relationships. This topic is to provide the opportunity to get a continuous update on this research area. A.N. #s</p> <p><b>Term of Reference a-v)</b> The acoustic target strength (TS) is an important metric in fisheries and plankton acoustics to inform on fish characteristics and to convert the acoustic energy in biomass units. This keystone variable can be used in several ways in the biomass estimation process. New information from TS modelling and in situ measurements plead in favour of exploring new avenues to characterise TS as a stochastic variable and comparing the relative advantage of using it as a probabilistic versus deterministic estimator. This topic is to initiate a discussion on this issue. A.N. #s</p> <p><b>Term of Reference b)</b> PGHAC, SGTSEB, SGASC and SGAFV meet before WGFAST in the same location and make their reports available to the WGFAST at its annual meeting according to their terms of reference. A.N. #s: 1.12.5</p>
Resource Requirements:	No new resources will be required for consideration of this topic at WGFAST annual meeting. Having overlaps with the other meetings of the Working, Planning and Study Groups of the Fisheries Technology Committee increases efficiency and reduces travel costs. Undertake additional activities in the framework of this group are negligible.
Participants:	Approximately 75 members and guests are expected to attend the meeting.
Secretariat Facilities:	None.
Financial:	No financial implications.
Linkages To Advisory Committees:	There are no direct linkages to the advisory committees but the work is of relevance to ACFM.
Linkages To other Committees or Groups:	The work in this group is closely aligned with complementary work in the FTFB Working Group. The work is of direct relevance to PGHAC, SGTSEB, SGASC, and SGAFV, PGSPUN, PGRS, PGHERS, and WGBIFS.

Linkages to other Organisations:	
Secretariat Marginal Cost Share:	ICES 100%

2005/2/FTC02 The **Study Group on Collection of Acoustic Data from Fishing Vessels** [SGAFV] (Chair: Bill Karp, USA) will meet in Hobart, Tasmania, Australia, from 25–26 March 2006 to:

- a) update, summarize and report on information on research which involves collection of scientific acoustic data from commercial vessels;
- b) develop recommendations for methods and guidelines for collection of acoustic data to address specific ecosystem monitoring, stock assessment and management objectives including: acoustic system calibration and performance monitoring, characterization of radiated vessel noise, comparability of results, survey design, biological sampling, data interpretation and analysis, and data storage and management; and
- c) prepare background material, guidelines, methods and recommendations for publication in the Cooperative Research Report series.

SGAFV will report by 1 May 2006 for the attention of the Fisheries Technology Committee and make its report available to WGFASST.

### Supporting Information

Priority	<p>Acoustic data is currently being collected from commercial vessels in many countries to address a range of ecosystem monitoring and stock management objectives. Methods, standards, and protocols for this type of data collection activity are lacking, and concerns regarding instrument performance and calibration, fish behaviour in relation to radiated vessel noise, survey design, biological sampling, data interpretation and management, and other factors have arisen.</p> <p>There exists an urgent need to evaluate this work and to develop recommendations for methods and guidelines for appropriate collection and use of acoustic data from commercial vessels. This need has been identified by a number of ICES Member Countries and observer countries and has been conveyed to WGFASST and FTC.</p>
Scientific Justification and relation to the Action Plan	<p>Action Item 1.10, 1.12.5, 1.14, 3.13 – a)  Action Item 1.13.1, 1.13.4, 1.13.5 – b)  Action Item 6.3 – c)</p> <p><b>Term of reference a):</b> Collection of acoustic data in support of ecosystem monitoring, stock assessment and other scientific objectives has traditionally been carried out with calibrated scientific instruments aboard research vessels. Demands for this type of information have continued to expand and, in many cases, now exceed the capacity of national research vessel fleets. At the same time, improvements in technology have made instruments capable of collecting scientific-quality acoustic data more widely available, and these types of instruments are being installed on many commercial fishing vessels. Scientists have taken advantage of this opportunity to collect data in support of a range of research and assessment objectives.</p> <p><b>Term of reference b):</b> Standardized methods and protocols have been developed for routine acoustic surveys aboard research vessels, and concerns regarding research vessel radiated noise impacts on fish behaviour have received significant attention by WGFASST and the broader scientific community. However, recommended methods and guidelines for collection of acoustic data from commercial vessels do not exist, and objective criteria for matching data collection procedures with research objectives or for evaluating data quality are lacking. While commercial vessels equipped with calibrated commercial sounders are suitable for collecting data in support of some specific research and survey objectives, use of these platforms and instruments will not always be appropriate.</p> <p><b>Term of reference c):</b> There is a recognized need to develop methods and protocols and publish them in an easily accessible report.</p>

	WGFAST and FTC continue to recognize the difficulty of addressing these needs during full working group sessions and support the continuation of this Study Group comprised of experts to develop recommended methods and guidelines without delay. This Study Group will meet three times. The third meeting will occur in Hobart, Tasmania, Australia in March, 2006.
Resource requirements	No new resources will be required for consideration of these topics at the relevant group meetings. Meeting during the same week as WGFAST will enable SGAFV to draw on a larger resource pool of experts which will increase efficiency in completing the objectives and reducing travel costs.
Participants	Thirty-one scientists and industry experts from eight ICES and three observer countries attended the second meeting of the Study Group. Several other active members of the Study Group were unable to attend the meeting. SGAFV members have made commitments to complete report drafting assignments in 2005 and attend the 2006 meeting.
Secretariat facilities	None.
Financial	No financial implications. Having overlaps with other meetings of expert groups of FTC increases efficiency and reduces travel costs.
Linkages to Advisory Committees	There are no direct linkages to the advisory committees but the work is of relevance to ACFM
Linkages to other organisations	No direct linkages, however, depending on the outcome, organizations such as FAO will be interested in the results.
Linkages to other Committees or Groups:	WGFAST. This work should have relevance to many working groups carrying out stock assessment of many semi-demersal and pelagic species in many ICES countries
Cost Share	ICES 100%

2005/2/FTC03 The **Study Group on Acoustic Seabed Classification** [SGASC] (Chair: John Anderson, Canada) will meet in Hobart, Tasmania, from 31 March to 2 April 2006 to:

- a) review and evaluate progress in:
  - i) acoustic seabed classification systems, acoustic technologies, theoretical complexities and limitations,
  - ii) acoustic data collection procedures and groundtruthing methods for supervised and unsupervised classification of seabeds and habitats, considering issues of measurement scale and integration of data products,
  - iii) metadata standards for acoustic systems, including single beam (SBS), multibeam (MBS) and sidescan sonars (SSS),
  - iv) practical applications of acoustic seabed classification (ASC) products in the management and conservation of coastal resources;
- b) intersessionally prepare a draft report and make it available for the WGFAST meeting of 27–30 March and receive and include comments from WGFAST;
- c) finalize draft of the Cooperative Research Report on “Acoustic Seabed Classification of Coastal and Continental Shelf Ecosystems”, taking comments by WGFAST into account.

SGASC will report by 1 May 2006 for the attention of the Fisheries Technology Committee, the Marine Habitat Committee, as well as ACE and the Working Group on Fisheries Acoustics and Science Technology.

## Supporting Information

Priority	Acoustic remote sensing of seabed characteristics for fish and shellfish habitat research and management is increasingly used stock estimation, effects of fishing gears on benthic communities, ecosystem research and habitat protection and management. This is a new and rapidly evolving discipline of marine science.
Scientific Justification and relation to Action Plan	<p>Action Item 1.4, 1.4.3, 1.10, 1.12.5 - a Action Item 5.4, 6.3 - b</p> <p>The use of acoustics for remotely measuring biological and physical characteristics of seabed habitats is a new and rapidly developing area of scientific research. Classification and mapping of marine habitats has been featured at Annual Science Conference theme sessions in 2000, 2002 and 2004. Several papers on this topic were published in the 2002 ICES Symposium on Acoustics in Fisheries and Aquatic Ecology. Scientific publications in the primary literature continue to increase as acoustic seabed classification (ASC) technologies make their way into marine research programs throughout the world. Results from these studies are now widespread and being incorporated into management processes. Other ICES groups and organizations are also interested in the development and standardization in this area of research. The terms of reference reflect the importance and timeliness of the study group on acoustic seabed classification (SGASC).</p> <p><b>Term of Reference a-i)</b> A thorough review of acoustic seabed classification systems and their associated technologies must consider the theoretical complexities and limitations to understand practical applications in marine conservation.</p> <p><b>Term of Reference a-ii)</b> Acoustic seabed classification is a remote sensing technology that can classify seabeds using unsupervised or supervised methods. Supervised classification requires the integration of groundtruth data and must consider issues of different measurement scales, measurement error and interpretation.</p> <p><b>Term of Reference a-iii)</b> National research programs are underway in many ICES countries using existing acoustic seabed classification systems which require standardization of data collection and reporting.</p> <p><b>Term of Reference a-iv)</b> The rapid developments of acoustic seabed classification technologies require a rigorous assessment of existing and potential capabilities to classify, map and manage marine resources.</p> <p><b>Term of Reference b)</b> Publication of the issues addressed by the study group will establish our current level of understanding and provide guidelines for future fisheries research and management application.</p>
Resource requirements	No new resources will be required at this time. Having overlaps with other meetings of Working, Planning and study groups of the Fisheries Technology Committee increases efficiency and reduces travel cost. WGFAST members of the Study Group have considerable experience in acoustics and in implementing operational solutions responding to such needs for understanding and the establishment of standardization guidelines.
Participants	Approximately 15 members are expected to participate in the Study Group. Members from other Committees or Working Groups interested in acoustic seabed classification, especially the WGs of Marine Habitat Committee will be notified and encouraged to participate in this SG.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to Advisory Committees	ACE
Linkages to other organisations	-
Linkages to other Committees or Groups:	The work of this Study Group is closely aligned with the work of WGFAST and WGFTFB. This work is complementary to the work of the Marine Habitat Committee, in particular WGMHM.
Cost Share	ICES 100%

2005/2/FTC04 A second **Workshop on Unaccounted Fishing Mortality** [WKUFM 2] (Chair: M. Breen\*, UK) postponed until second half of 2006 to:

- a) identify measurable components of unaccounted fishing mortality; and
- b) define indices for assessing their relative impacts in key fisheries, for different capture methods.

WKUFM will report by 2006 for the attention of the Fisheries Technology Committee, the Study Group on Unaccounted Fishing Mortality (SGUFM), and the Working Group on Fishing Technology and Fish Behaviour (WGFTFB) and all stock assessment WGs.

### Supporting Information

Priority	High: This Workshop will contribute to the activities of the Study Group on Unaccounted Fishing Mortality (SGUFM) and, as such, will lead ICES into issues related to quantifying sources of fishing mortality, in addition to those that can be accounted for with commercial landings data.
Scientific Justification	<p>Action Item 3.16, 4.3, 4.10-a) and b)</p> <p>The objective of this workshop will be to assess the impact of unaccounted fishing mortality on the management of selected key stocks, on which ICES currently advises. The sources of unaccounted fishing mortality that will be addressed are:-</p> <p>Illegal, unreported and unregulated fishing; Discard mortality; Escape mortality; and Ghost fishing.</p> <p>One of the main reasons that these potential sources of fishing mortality have not been accounted for in the management of fisheries, both globally and in ICES, has been the absence of good scientific information. Recent and ongoing work by SGUFM and WKUFM has identified sources of information on unaccounted fishing mortality for some stocks and methods for assessing their impact upon the management of the affected fisheries.</p> <p>This Workshop will assess the impact of unaccounted fishing mortality on the management of key selected stocks, based on information and data currently being gathered by SGUFM. This work will provide essential information and data for the work currently being conducted by SGUFM and the stock assessment WGs.</p>
Resource Requirements	No ICES resources
Participants:	Members of SGUFM, WGFTFB and some stock assessment WGs, but contributions from other ICES members and individuals not affiliated with ICES may be sought.
Secretariat facilities	None required beyond report compilation
Financial	No specific funding from ICES, non-ICES participants to incur their own costs.
Linkages to other Committees or Groups	<p>This work will contribute to the activities of the Study Group on Unaccounted Fishing Mortality (SGUFM); and will be of interest to the Working Group on Fishing Technology and Fish Behaviour (WGFTFB) and the stock assessment Working Groups.</p> <p>The work is of direct relevance to issues dealt with in ACE and ACFM</p>
Linkages to other organisations	FAO
Cost:	ICES 100%

2005/2/FTC05 The **Study Group on Survey Trawl Standardisation [SGSTS]** (Chair: Dave Reid, UK) will meet in conjunction with the 2006 meeting of WGFTFB in Izmir, Turkey, from 1–2 April 2006.

- a) Produce documented generic protocols for using net performance monitoring equipment in bottom trawl surveys including new sensors;
- b) Produce generic guidelines on:
  - Net drawings.
  - Trawl procurement and construction.
  - Rigging prior to surveys.
  - Net repair and replacement on surveys.
  - Personnel training.
- c) Produce specific guidelines on the above for the North Sea IBTS;
- d) Define procedures for calibration in the specific case of gear changes;
- e) Provide report on the differences in GOV trawls deployed within the IBTS;
- f) Report on development of the Norwegian Survey Trawl Project;
- g) Define chapters and contents of proposed CRR – including writing responsibilities and timetable.

SGSTS will report by 1 May 2006 for the attention of the Fisheries Technology Committee, the Living Resources Committee, and the Resource Management Committee and make its report available to WGFTFB, WGIBTS.

### Supporting Information

Priority:	High: Bottom trawls provide fisheries independent data used in stock assessment of many commercial finfish and shellfish species worldwide. Minimizing survey variability is a key issue in developing accurate and reliable time series of abundance. In 2003 ICES has mandated that all users of survey gears within ICES should develop a programme of standardization.
Scientific Justification: and relation to Action Plan	<p>Action Plan: 1.125, 1.13.4, 4.10 -a)</p> <p>Action Plan: 1.13.1, 5.4, -b)</p> <p>Action Plan: 1.13.1, 5.4 -c)</p> <p>Action Plan: 1.13.1, 5.4, -d)</p> <p>Action Plan: 1.13.1, 5.4, -e)</p> <p>Action Plan: 6.3-f)</p> <p>There are continuing developments in trawl design and instrumentation available for surveys. Requirements for surveys may be changing such as the possibility of absolute abundance estimates being needed as a result of lower reliability of fishery dependent data. In recent years there have been criticisms of protocols associated with some surveys. As a result of all these developments, it is recognised that a review and possible development of a new programme of standardization and quality control are needed. For example, a Study Group (SGSTG) has recently identified the need for some changes to current practice in the IBTS Western Waters surveys.</p> <p>It is proposed to review possible options for developing survey trawl design and, at the same time, to develop a generic programme of standardization which would achieve wider benefits to all survey users within ICES.</p>
Resource Requirements:	No ICES resources
Participants:	Members of the WGFTFB, WGFAST, WGIBTS

Secretariat facilities:	None required above report compilation
Financial:	Specific funding requested from European Commission
Linkages to other Committees or Groups:	ACFM, ACE and all trawl survey and trawl based assessment groups
Linkages to other organisations:	None
Secretariat Cost:	ICES:100%

2005/2/FTC06 The **ICES/FAO Working Group on Fishing Technology and Fish Behaviour [WGFTFB]** (Chair: Norman Graham, Norway) will meet in Izmir, Turkey, from 3–7 April 2006 to:

- a) The WG shall work intersessionally in topic groups to prepare documents on the following topics in continuation of ongoing work:
  - review the species and size selectivity issues relating to commercial and survey pelagic and semi-pelagic trawls.
  - explore the means by which it can best provide appropriate information for assessment working groups and ACFM in fishery and ecosystem based advice. This will include the information required for fisheries-based forecasts, technological changes and changes in fishing practices, implementation of regulations and other fleet adaptations, ecosystem effects of fishing and potential mitigation measures. This advice will be focussed on the North Sea and address the assessment WG tasks as identified in the report of AMAWGC.
  - continue to work on alternative fishing gears for traditional species that are environmentally friendly and responsible fishing methods, reporting to WGFTFB in 2006. This work will be undertaken by the relevant Topic Group, which will continue its work for another year;
  - continue work on the use of multiple size selection devices in towed gears, reporting to WGFTFB in 2006. This work will be undertaken by the relevant Topic Group, which will continue its work for another year;
- b) establish a new topic group that will work intersessional to:
  - review and update the existing “Definitions and classification of fishing gear categories” to the same detail level as in the FAO Technical Paper 222. As background for this work the group will contact appropriate national and international fisheries management bodies to determine the current status and usage of gear classifications, in collaboration with the FAO Working Party on Fisheries Statistics. The group will identify inconsistencies between adjacent areas and make recommendations for any actions needed to harmonise the use of gear classifications. The group will also identify specific gear parameters that could be monitored to provide better estimates of commercial CPUE. The topic group will be co-chaired by Wilfried Thiele, FAO and John Willy Valdemarsen, IMR, Norway.
- c) FTFB shall review the reports from the topic groups mentioned above in subgroups and shall meet in plenum to adopt the report of the meeting.

The Topic Group Co-Chairs will encourage representatives from FAO regions to participate in the meeting.

WGFTFB will report by 28 April 2006 for the attention of the Fisheries Technology Committee.

## Supporting Information

Priority:	The current activities of this Group will lead ICES into issues related to the effectiveness of technical measures to change size selectivity and fishing mortality rates. Consequently these activities are considered to have a very high priority
Scientific justification and relation to Action Plan:	<p>Action Item 3.1, 3.2, 3.16</p> <p>Action Item 3.16</p> <p>Action Item 2.13</p> <p>Action Item 3.16</p> <p>Action Item 3.17, 3.18</p> <p>Action Item 1.13</p> <p><b>a)</b> In the last decade there has been increasing pressure on pelagic species in the north Atlantic as well as in other areas. There are reports of widespread discarding, slipping and meshing in many pelagic fisheries but little research has been carried out into improving gear design and selectivity to mitigate these problems. Bycatch of non-target species, for example demersal species, also remains a problem in some fisheries. There is also uncertainty as to whether fishing pressure influences the migrations or shoaling behaviour of pelagic species including capelin.</p> <p>It is proposed to relate current pelagic trawl designs to fish behaviour in the trawl in order to identify gear modifications that might improve gear selectivity. A review of all known information on pelagic trawl selectivity will be carried out including industry initiatives using T90 and hexagonal mesh, on which there has been only limited technical assessment. A review of current knowledge on fish behaviour and escape mortality will also be carried and this will cover both the target pelagic species and bycatch species. Gaps in the information base will be identified. The expected output will be the identification of areas of further gear research and fish behaviour to improve the selectivity of pelagic trawls.</p> <p><b>b)</b> WGFTFB is receiving requests for advice that require it to apply its expertise in novel ways. This topic will be undertaken over two years and be structured in an incremental way. Reports will be made to FTFB and Amawac in 2006 at which point the approach taken will be reviewed. The two year duration reflects the complexity of the task, particularly for countries like Norway with diverse fleets and fisheries, and it will be undertaken in collaboration with assessment groups at a national level. The main areas to be covered will be:</p> <ol style="list-style-type: none"> <li>1. The fisheries and their impacts, including information on vessel and gear types, recent technological changes within the fisheries and the potential impacts (quantitative and qualitative) of future developments.</li> <li>2. Effect of fishing on the ecosystem, including identifying those fisheries with significant discard and ghost fishing problems, with data on discard and escape mortality, where gear-related technical measures can reduce ecosystem impacts and where there are possibly ineffective technical measures.</li> <li>3. Mixed fisheries and fisheries interactions, providing additional information on medium or high discard practices, assessing the potential for using catch information rather than landings and the identification of more localised species interactions.</li> <li>4. Regulations and their effects including a summary of legislation relating to fishing gear construction and operation in the region, best estimates of the selective properties as per legislative description (if available), information on the scale and type of regulation circumvention and, where regulations are 'optional'; identifying the degree of uptake where possible. Also identifying any other unregulated aspects of design and operation that may have significant selection or ecological effects.</li> <li>5. Factors affecting fishing operations; for example any major changes in fishing patterns will be noted and these changes and their potential causes will be reported and interpreted. Similarly, if it is foreseen that fleet operational changes may take place, this will also be noted.</li> </ol> <p><b>c)</b> Many fishing practices are essentially the same as when developed centuries ago. Many are energy inefficient and are deleterious to the environments. Here we aim to use the natural behavioural patterns of fish to develop energy efficient non-deleterious harvesting practices that may have applications in fisheries worldwide.</p> <p><b>d)</b> There are a considerable number of fisheries worldwide that have mandated the use of additional devices (other than cod-end mesh size) for adjusting size selection. These include the use of escape panels (BACOMA etc) and grids such as the Sort-X. There is</p>

	<p>an increasing volume of evidence which suggests that, in some instances, the same effect can be achieved simply by increasing the mesh size. The introduction of such devices may place an additional financial cost on the fishermen and complicate legislative procedures may be important considerations. In other fisheries, particularly multi-species, the benefits of such devices are that they are more effective with one species (or group) while not impacting on others, for example square mesh panels and <i>Nephrops</i> trawls. There may also be other benefits for managers; for example, these 'additional' devices may provide more predictable selectivity.</p> <p>A common nomenclature and definition of fishing gears used in world fisheries is fundamental for discussions of many gear related issues. A modern fishing gear classification should reflect the diversity of fishing gears in use as well as being useful for management purposes. Besides the fishing gear classification developed by FAO in 1971 with later revisions, countries and regional fisheries management bodies have adopted their own classifications. The joint FAO/ICES working group FTFB is the most competent global group to identify and describe the fishing gears used globally. As the present gear classification was developed several years ago a need for an update is expressed by the Coordinating Working Party on Fisheries Statistics (CWP) and other global bodies dealing with fishing gear.</p> <p>There are a number of examples where different codes for a given gear are applied at a national and international level; making direct comparisons between national statistics problematic. To harmonise gear codes across areas is a considerable undertaking and may take several stages. In the first instance the group will identify inconsistencies between and within fisheries regions and compare these to the updated FAO gear classification codes. The group will identify an appropriate actions required to harmonise gear code usage including identification of relevant stakeholders e.g. stock assessment scientists, gear technologists and data managers, necessary for such an undertaking.</p> <p>Fisheries management bodies are often dependant on catch per unit fishing gear effort for stock assessment purposes. A better understanding of the catching performance of the various gear units might be useful to facilitate this task. The work to be conducted by the topic group is in consultation with the users of such data identify how fishing gear technologist can assist in the development of proper fishing gear classes, including indicators of catching performance of such gear units.</p>
Resource requirements:	
Participants:	The Group is well attended
Secretariat facilities:	N/A
Financial:	None required.
Linkages to Advisory Committees:	The questions of by-catch reduction are of direct interest to ACFM and seabed damage is of direct interest to ACE.
Linkages to other Committees or Groups:	This work is of direct relevance to the Working Group on Ecosystem Effects of Fisheries, WG on Fishery Systems, Baltic Committee, Marine Habitat Committee, Resource Management Committee and Living Resources Committee
Linkages to other Organisations:	The work of this group is closely aligned with similar work in FAO
Cost share:	ICES: 100%

2005/2/FTC07 A Study Group on Unaccounted Fishing Mortality [SGUFM] (Chair: Mike Breen, UK) will continue to work in 2006 to:

- a) conduct and report on a comprehensive literature review, building upon the work of the previous Study Groups on issues relating to the sources of fishing mortality other than those that can be accounted for by the reported catch;
- b) review and evaluate the report of the September 2005 Aberdeen Workshop on Unaccounted Fishing Mortality [WKUFM] and incorporate it's recommendations where applicable;
- c) collate available data on sources of unaccounted fishing mortality (2006) and produce a comparative summary of their relative impacts, for different capture methods in key fisheries (2007);
- d) review and make recommendations on methods used to estimate escape mortality from towed fishing gears;

SGUFM will report by 30 September 2006 to the Fisheries Technology Committee and make its report available to WGFTFB and all stock assessment WGs.

A progress report, including a report from the second workshop [WKUFM], will be made to the WGFTFB meeting in Izmir, Turkey, 3-7 April 2006.

### Supporting Information

Priority	The current activities of this Group will lead ICES into issues related to quantifying sources of fishing mortality in addition to those that can be accounted for with commercial landings data. Consequently these activities are considered to have a very high priority
Scientific Justification and relation to Action Plan	Action Item 2.1, 2.3-a) Action Item 2.1, 4.10-b) Action Item 2.3, 3.5, 3.16-c) Action Item 3.16-d)  Terms of reference a-d. Fishing mortality is one of the less documented variables in fisheries science, and particularly because of unaccounted mortality. In an Ecosystem – based management of fisheries, such lack of information may lead to erroneous conclusions and recommendation. Having a clear view of the impact of unaccounted fish mortality becomes a priority. The objective of the Study group is to publish a comprehensive review of the main sources of fish mortality that are not accounted for by the reported catch and to produce a series of recommendations.  This group will meet prior to the ICES ASC in September 2006. It will report annually to FTC on progress and produce a more detailed report at least every third year. This report will be also reviewed by WGFTFB before finalization for consideration by FTC. The SG plans to hold a further workshop in April 2006 [WKUFM 2].
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
Participants	Members of SGUFM currently include: A. Bilbao (Spain), T. Blasdale (UK), M. Breen (UK), L.R. Cruz (Faroe Islands), D. Erickson (USA), M. Farrington (USA), A. Frechet (Canada), D. Garcia (Spain), N. Graham (Norway), E. Grimaldo (Norway), K. H. Hauge (Norway), I. Huse (Norway), O. Ingolfsson (Iceland), P. MacMullen (UK), C. Millar (UK), H. Milliken (USA), M. Pol (USA), A. Revill (UK), D. Rihan (Eire), P. Serafino (UK), A.V. Soldal (Norway), A. Stewart (UK), and P. Suuronen (Finland).  There are other scientists active in this area in Europe, Canada and USA, including members of WGFTFB, who may be recruited to SGUFM on an <i>ad hoc</i> basis.
Secretariat facilities	None
Financial	None
Linkages to other Groups or Committees	WGFTFB and stock assessment WGs.
Linkages to Advisory Committees	Work is of direct relevance to issues being dealt with in ACE and ACFM
Linkages to other organizations	FAO
Cost Share	ICES 100%

2005/2/FTC08 The **Study Group on Target Strength Estimation in the Baltic Sea** [SGTSEB] (Chair: John Horne, USA\*) will continue to work by correspondence in 2006 to:

- a) prepare a new revised and updated version of the document already existing to submit to WGFASST in Hobart, Australia, 27–30 March 2006;
- b) prepare a draft report on the work of the Study Group for possible publication in the *ICES Cooperative Research Report* series, to be submitted at the Fisheries Technology Committee session during the 2006 ASC.

SGTSEB will make a final report available for the attention of the Fisheries Technology Committee and the Baltic Committee and make its report available to WGFAST.

### Supporting Information

Priority:	The variability and trends on the TS of Baltic herring have been recognized as important
Scientific Justification and relation to Action Plan:	Action Item 1.12, 1.12.5, 4.1, 6.3 –a) and b)  The reasons and sources of variations are rather well documented and understood in the particular case of the Baltic Herring population. Although these sources of variation are particularly important in the case of the Baltic herring, it is clear that they are not specific to this population and that any result from this particular population would have potential application on other stocks.  Due to the fact that (a) there is an urgent need of improving the definition of the TS of Baltic herring (b) there is good knowledge of this population and (c) there are potentially good possibilities of measurements and experimentation on this fish, this population could be considered as a test population for the WGFAST members to understand and improve the meaning and value of target strength on pelagic fish.
Resource Requirements:	None
Participants:	In general those who attended the 2003-meeting.
Secretariat Facilities:	None
Financial:	No financial implications
Linkages To Advisory Committees:	There are no direct linkages to the advisory committees however, it has bearing on assessment of Baltic herring by ACFM
Linkages To other Committees or Groups:	This group is closely aligned to WGFAST and WGBIFS and its results should be of interest to other Groups carrying out herring surveys.
Linkages to other Organisations:	
Secretariat Marginal Cost Share:	ICES: 100%

2005/2/FTC09 The **Planning Group on the HAC Data Exchange Format** [PGHAC] (Chair: L. Berger, France) will continue to work by correspondence in 2006 to:

- a) co-ordinate the further development of the HAC standard data exchange format;
- b) provide information on the changes in the format and its evolution;
- c) share information between manufacturers and users on the way acoustic data are processed and stored;
- d) review the final version of tuples for multi-beam echosounders;
- e) review the development of a tuple for acoustic trawl geometry instruments.

If needed the group will meet during the WGFAST meeting in Hobart, Tasmania, 27–30 March 2006.

PGHAC will make a report available to WGFAST for a meeting 27-30 March and include feedback into the final report which should be finalised by 14 July 2006 for the attention of the Fisheries Technology Committee and WGFAST.

### Supporting Information

Priority:	Essential component of WGFAST activities. The group defines the standard data
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	capture and exchange format for all acoustic instrumentation
Scientific Justification and relation to Action Plan:	<p>Action Item 1.12.5, 1.13.1, 1.13.3, 1.13.5, 5.4- (a, b, d, e) Action Item 5.11, 5.12-(c)</p> <p>The common data format (called <b>HAC - Hydro Acoustic</b>) is now already usable and shared by most of the users and manufacturers. It has been agreed that such a format must be allowed to evolve and that a group is needed to continue to work on the format in order to adapt it to the latest versions of equipment and to improve it. It is considered important that WGFASST be informed continuously on the changes in the format and its evolution; there is also a need to share information between manufacturers and users on the way acoustic data are processed and stored. This requires a permanent forum in order to deliver to the FAST members the up-dated versions of the HAC and to answer the questions of both users and manufacturers.</p> <p>The PG agreed that it could continue its work for the time being by correspondence. The main aim for the future will be to finalize the development of tuples for multi-beam echosounders, which are considered as the next major step in the methodology, and to define new tuples for acoustic trawl geometry instruments to improve the methodology for coupling acoustics and biological sampling.</p> <p><b>NOTE:</b> a Tuple is a term from set theory which refers to a collection of one or more attributes.</p>
Resource Requirements:	None required. No formal meetings are required and all business will be conducted by email
Participants:	The <b>HAC group</b> includes representatives from WGFASST member institutions, and representatives of fisheries software suppliers and fisheries sounder manufacturers. The normal composition will consist of one representative from each organisation or institution and an additional nominated chair from within the <b>HAC</b> group. The <b>HAC</b> group can ask for participation on a non-voting basis of any other experts, accepting this on a majority basis. Current members from: France, UK, Canada, Norway, USA & Australia
Secretariat Facilities:	None
Financial:	No financial implications
Linkages To Advisory Committees:	There are no direct linkages to the advisory committees
Linkages To other Committees or Groups:	This Group is closely aligned to WGFASST. This work is valuable for any ICES group conducting acoustic resource and monitoring surveys.
Linkages to other Organisations:	This group works closely with industry in achieving its objectives.
Secretariat Marginal Cost Share:	100%