

Application for Consent to conduct  
Marine Scientific Research

Date: 26th of June 2017

1. General Information

1.1 Cruise name and/or number: IBTS 2018
--

1.2 Sponsoring Institution(s):	
Name:	IFREMER
Address:	Siège social : Technopolis 40 155, rue Jean-Jacques Rousseau - 92138 Issy les Moulineaux - France
Name of Director:	François Jacq

1.3 Scientist in charge of the Project:	
Name:	Arnaud AUBER
Country:	FRANCE
Affiliation:	IFREMER
Address:	Ifremer - Centre de Boulogne-sur-Mer 150, quai Gambetta - BP 699 - 62321 BOULOGNE/MER - FRANCE
Telephone:	33 (0)3.21.99.56.74
Fax:	33 (0)3.21.99.56.01
Email:	<a href="mailto:Arnaud.Auber@ifremer.fr">Arnaud.Auber@ifremer.fr</a>
Website (for CV and photo):	<a href="http://wwz.ifremer.fr/institut_eng/">http://wwz.ifremer.fr/institut_eng/</a>

1.4 Entity(ies)/Participant(s) from coastal State involved in the planning of the project:		
Name:	Jim Ellis	Finlay BURNS
Affiliation:	CEFAS	MARLAB
Address:	MAFF, Fisheries Laboratory Lowestoft Suffolk NR33 OHT	SOAFD, Marine Laboratory P.O. Box 101 Victoria Road Aberdeen AB9 8DB
Telephone:	+44 1224 295507	+44 1224876544
Fax:	+44 1224 295511	+44 1224295376
Email:	<a href="mailto:jim.Ellis@cefas.co.uk">jim.Ellis@cefas.co.uk</a>	<a href="mailto:F.Burns@marlab.ac.uk">F.Burns@marlab.ac.uk</a>
Website (for CV and photo):	<a href="http://www.cefas.defra.gov.uk/">http://www.cefas.defra.gov.uk/</a>	<a href="http://www.scotland.gov.uk/Topics/marine">http://www.scotland.gov.uk/Topics/marine</a>

2. Description of Project

2.1 Nature and objectives of the project:
<p>The knowledge of the state of fish stocks is necessary to define management measures. Analysis carried out during the IBTS (International Bottom Trawl Survey) cruise are essential to elaborate the propositions by the ICES working groups (International Council for the Exploration of the Sea). Then, these propositions are examined by the European Union which defines management of fish stocks.</p> <p>Thus, a real-time diagnosis on the targeted populations is obtained through IBTS surveys. For that, working methods were defined by all countries involved in this programme: for example, the use of a standard bottom trawl and the sampling of all the areas by two different research ships. In order to determine indices of herring and sprat larvae (0 groups), each participating vessel operates with a MIK net during the night (Methot Isaac Kidd).</p>

For 20 years, the southern part of the North sea has been allocated to the French Research Vessel and since 2007, the Eastern Channel has been integrated the whole sampled area. As interactions and migrations of stock between these two areas are important, Eastern Channel is often associated the North Sea for stock assessment. Herring for example which is exploited all the year in the North sea comes into the Channel during November and December for reproduction. More precise information on larvae indices are obtain when this area is sampled.

In addition to the works done for the IBTS program, other works are implemented onboard Research Vessel Thalassa :

- an acoustic prospection in the English Channel,
- a study on fish spawning areas, using the Continuous Underwater Fish Eggs Sampler device (CUFES),
- a species-specific winter abundance and distribution of the winter planctonic community (phyto and zoo plancton),
- a monitoring study on the structure and distribution of the benthic macro invertebrates communities.

2.2 If designated as part of a larger scale project, then provide the name of the project and the Organisation responsible for coordinating the project:

The International Bottom Trawl Survey project is coordinated by The International Council for Exploration of the Sea in Copenhagen (Danemark)  
(<http://www.ices.dk/Pages/default.aspx>)

2.3 Relevant previous or future research projects:

France participates to this cruise since 1976 every year during the first quarter. Between 1992 and 1996, a survey was carried out also during the third quarter.

2.4 Previous publications relating to the project:

- After each survey, a descriptive report of the cruise is done by France and an annual report is produced by the members of the International Bottom Trawl Survey Working Group.
- A large number of ICES International Working Groups use these data :
  - Herring Assessment Working Group for the area South of 62° N
  - Working Group on the assessment of demersal stocks in the North Sea and Skagerrak.
  - International Bottom Trawl Survey Working Group.
  - Working Group on Fish Ecology
  - Working Group on Methods of Fish Stock Assessments
  - Working Group on Oceanic Hydrography
  - Study group on Stock Identity and Management Units of Whiting
  - Study Group on Risk Assessment and Management Advice
  - Study Group on Survey Trawl Standardisation
  - Study Group on the North Sea Benthos Project 2000
  - Regional Ecosystem Study Group for the North Sea
  - Report of the ICES/IOC Steering Group on GOOS (SGGOOS)
  - Planning Group on North Sea Pilot Project NORSEPP (PGNSP)
  - Planning Group on North Sea Cod and Plaice Egg Surveys in the North Sea

### 3. Geographical Areas

3.1 Indicate geographical areas in which the project is to be conducted (with reference in Latitude and longitude in decimal degrees, including coordinates of cruise/track/way points/sampling stations). Please provide coordinates in a separate excel spreadsheet.

**Works during the day :**

Positions of trawl stations are listed in annex. The same area is covered every years :  
Since the survey exists, all the trawling stations are stored in an International data base and

every country is free to take them for their own survey.

**Works during the night :**

Larval net stations are made in the same area as trawl stations (at least, 2 or 4 larval stations per square). Nevertheless, these positions are not fixed and these stations could be carried anywhere in all square. But, in all cases, stations will never be done within the 3 nautical miles and trawl positions will be communicated every day to coastal authorities.

3.2 Attach chart(s) at an appropriate scale (1 page, high-resolution) showing the geographical Areas of the intended work and, as far as practicable, the location and depth of sampling Stations, the tracks of survey lines, and the locations of installations and equipment.

Thalassa samples the Southern part of the North Sea for many years. In 2017, the area covered it is shown Annex I, Figure 1. In each square (1° X 30'), one or 2 GOV hauls and 2 or 4 MIKs stations will be made in the area between 51° and 55° N. The English Channel is partly covered since 2007 (Eastern part). The figure 2 (Annex I) shows the positions of the trawling stations in each Exclusive Economic Area. For IBTS2018, hauls made by the N/O Thalassa in 2016 and 2017 will be chosen in priority (Figure 2, table 1 and 2 in Annex I). But if required, or if there is no enough trawl in a square, some tows from the International data base listed in the table 3 (in annex) could be taken. In the same way, some additional hauls could be done for convenience with some scientific questions/projects (see orange rectangles in Figure 1, Annex 1).

4. Methods and means to be used

4.1 Particulars of vessel:	
Name:	<b>Thalassa</b>
Type/Class:	
Nationality (Flag State):	French
Identification Number (IMO/Lloyds No.):	
Owner:	Ifremer
Operator:	Genavir
Overall length (meters):	74,5 m
Maximum draught:	6,10 m
Displacement/Gross Tonnage:	2 803 UMS
Propulsion:	Diesel Electric
Cruising & maximum speed:	11 knots
Call sign:	FNFP
INMARSAT number and method and capability of communication (including emergency frequencies):	<p><b>GSM :</b></p> <ul style="list-style-type: none"> <li>- 33.6.07.32.44.87 (bridge)</li> <li>- 33.6.16.87.10.69 (captain)</li> </ul> <p><b>Fax :</b> 33.6.20.18.50.20</p> <p><b>Inmarsat :</b> Tel : 00.870.7.731.600.16 (bridge)  Fax : 00.870.7.831.600.57</p> <ul style="list-style-type: none"> <li>- Vsat : Tel : 33.2.98.22.48.05 (bridge)</li> <li>Fax : 33.2.98.22.48.06</li> <li>- Telex Inmarsat C1 : 058x.4.227.297.10</li> <li>- Telex Inmarsat C2 : 058x.4.227.297.11</li> </ul> <p>(Codes: East Atlantic: 0581 - West Atlantic: 0584  - Pacific : 0582 - Indian Ocean: 0581)</p> <p>email : <a href="mailto:TL.Commandant@thalassa.ifremer.fr">TL.Commandant@thalassa.ifremer.fr</a>  Email Telex C1 : <a href="mailto:ThalassaC1@skyfile-c.com">ThalassaC1@skyfile-c.com</a>  Email Telex C2 : <a href="mailto:ThalassaC2@skyfile-c.com">ThalassaC2@skyfile-c.com</a></p>
Name of Master:	Loïc Provost
Number of Crew:	25
Number of Scientists on board:	25
4.2 Particulars of Aircraft: NO Aircraft	
Name:	

Make/Model:	
Nationality (flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall Length (meters):	
Propulsion:	
Cruising & Maximum speed:	
Registration No.:	
Call Sign:	
Method and capability of communication (including emergency frequencies):	
Name of Pilot:	
Number of crew:	
Number of scientists on board:	
Details of sensor packages:	
Other relevant information:	

4.3 Particulars of Autonomous Underwater Vehicle (AUV): No AUV	
Name:	
Manufacturer and make/model:	
Nationality (Flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall length (meters):	
Displacement/Gross tonnage:	
Cruising & Maximum speed:	
Range/Endurance:	
Method and capability of communication (including emergency frequencies):	
Details of sensor packages:	
Other relevant information:	

4.4 other craft in the project, including its use: NO

4.5 Particulars of methods and full description of scientific instruments to be used(for fishing gear specify type and dimension)		
<b>Types of samples and Measurements:</b>	<b>Methods to be used:</b>	<b>Instruments to be used:</b>
Samples of various fishes by bottom trawl (see chart)	During daytime, a Bottom trawl is deployed during 30 mn (speed 4 knots)	GOV 36/47 (Grande Ouverture Verticale) with a double codent in 20 mm meshsize (stretched)
Samples of herring and sprat larvae in the Southern North Sea	A larval net is deployed at night between the surface and 5 meters upper the bottom. The haul duration is at least 10 minutes and the speed is 3 knots	MIK net (Methot Isaac Kidd) 13 meter long.
Temperature and salinity measurements	A CTD is deployed after each trawl and net station.	CTD (Seabird SBE 19)
Samples of fish eggs to know eggs areas in the Southern North Sea	Sea water is pumped at 3 meters under water surface (internal pump) and filtered in order to sort fish eggs	Continuous Underway Fish Eggs Sampler (CUFES)
Samples of	Vertical samples during the	A vertical net WP2

zooplankton and phytoplankton	night with a vertical net	
Acoustic records	With an echosounder, data are recorded during hauls and during transects	Sounder : ER 60 and Multibeam echosounder ME 70
Sub marine video (Optional)	In the English Channel and southern part of the North sea a camera will be towed after hauls to determinate benthic fauna	Details on the device used are available at : <a href="http://www.ifremer.fr/ezprod/index.php/dyneco/moyens_ouils/instrumentation_in_situ/laboratoire_benthos">http://www.ifremer.fr/ezprod/index.php/dyneco/moyens_ouils/instrumentation_in_situ/laboratoire_benthos</a>

4.6 Indicate nature and quantity of substances to be released into the marine environment:

Fish and benthic organisms

4.7 Indicate whether drilling will be carried out. If yes, please specify:

No drilling are planned during this cruise

4.8 Indicate whether explosives will be used. If yes, please specify type and trade name, Chemical content, depth of trade class and stowage, size, depth of detonation, frequency of Detonation, and position in latitude and longitude:

No use of explosive

## 5. Installations and Equipment

Details of installations and equipment (including dates of laying, servicing, method and Anticipated timeframe for recover, as far as possible exact locations and depth, and Measurements):

No equipment and installation

## 6. Dates

6.1 Expected dates of first entry into and final departure from the research area by the research vessel and/or other platforms:

Date of entry: 11 January 2018 (=minimum date for the beginning of the research survey)

Date of departure: 18 February 2018 (=maximum date)

6.2 Indicate if multiple entries are expected: YES

During the survey more than one entry is expected in the UK waters

## 7. Port Calls

7.1 Dates and Names of intended ports of call:

10 days after the beginning of the survey: Scheveningen, The Netherlands (1 day)

7.2 Any special logistical requirements at ports of call:

7.3 Name/Address/Telephone of shipping agent (if available):

## 8. Participation of the representative of the coastal State

8.1 Modalities of the participation of the representative of the coastal State in the research Project:

The IBTS survey is an international project and scientists or any representative of the coastal State can participate to it. Names of participants (one for each part of the survey) must be sent to the scientist in charge at least 3 months before the beginning of the survey. Participant has to provide a medical certificate testify his ability to embark.

#### 8.2 Proposed dates and ports for embarkation/disembarkation:

- Boulogne-sur-Mer (France) to Scheveningen (The Netherlands):  
From: 1<sup>st</sup> day of the survey (i.e., minimum date: 11 January 2018).  
To: 1<sup>st</sup> day of the survey + 10 days.
- Scheveningen to Boulogne-sur-Mer:  
From: 1<sup>st</sup> day of the survey + 11 days.  
To: End of the survey = maximum date = 18 February 2018.

### 9. Access to Data, Samples and Research Results

#### 9.1 Expected dates of submission to coastal State of preliminary report, which should include The expected dates of submission of the data and research results:

After the survey, data will be sent to ICES and firstly used for the herring assessment working group in March 2018. The report for this group will be available in May.  
All data and reports are available to ICES (Copenhagen) generally 6 months after the survey at <http://datras.ices.dk/Home/Default.aspx>

#### 9.2 Anticipated dates of submission to the coastal State of the final report:

A cruise report will be available in June 2018 by the scientists in charge

#### 9.3 Proposed means for access by coastal State to data (including format) and samples:

Data are stored at the ICES and available on the website:

<http://datras.ices.dk/Home/Default.aspx>

Specific data could be asked directly to the scientist in charge of the survey  
(Arnaud.Auber@ifremer.fr)

#### 9.4 Proposed means to provide coastal State with assessment of data, samples and Research results:

(see 9.3)

#### 9.5 Proposed means to provide assistance in assessment or interpretation of data, samples And research results:

(see 9.3)

#### 9.6 Proposed means of making results internationally available:

(see 9.3)

### 10. Other permits Submitted

#### 10.1 Indicate other types of coastal state permits anticipated for this research (received or Pending):

### 11. List of Supporting Documentation

#### 11.1 List of attachments, such as additional forms required by the coastal State, etc.:

Signature:	Contact information of the focal point:	Address: BP 699 150 quai Gambetta
------------	---	-----------------------------------



Name: Arnaud Auber  
Country: France  
Affiliation: IFREMER

Telephone: + 33 3 21 99 56  
74  
Fax: + 33 3 21 99 56 01  
Email:  
Arnaud.Auber@ifremer.fr

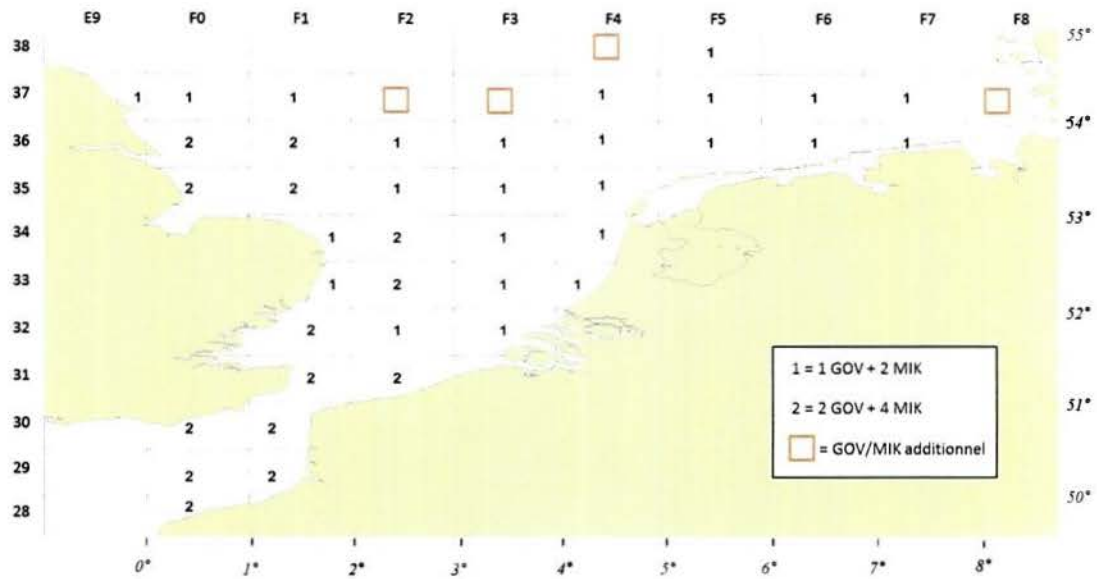


Figure 1: Planning for the French IBTS17 Survey in the Southern North Sea. In each ICES squares, the Thalassa have to make 1 or 2 hauls with the GOV 36/47 during the day. At night 2 or 4 MIK stations (larval net). Potential additional hauls could be done in ICES rectangles containing orange squares.

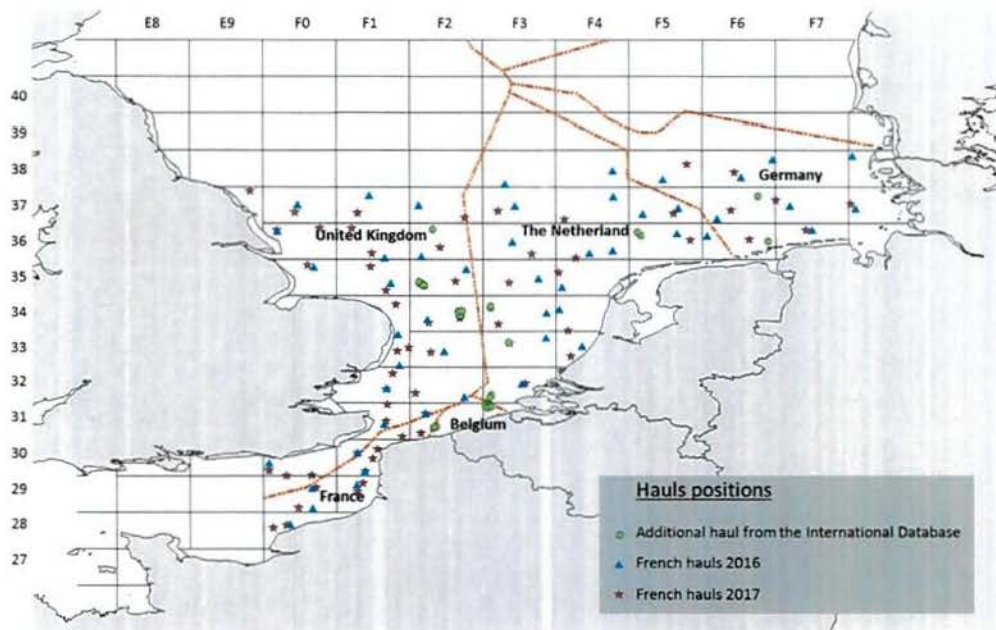


Figure 2: Southern North sea and Eastern Channel. Positions of trawl stations in each Exclusive Economic Area. Depending on the number of trawl in each squares, Positions from previous survey (2016 and 2017) will be chosen in priority (blue triangles and red stars on the map). If useful, more trawl stations could be chosen in the International data base (green points). Positions of larval net stations (during night) will be made in the same area (at least, 2 or 4 stations per square). Nevertheless, these positions are not fixed and these stations could be carried anywhere in all square. But, in all cases, stations will never be done within the 3 nautical miles and positions will be communicate every days to coastal authorities.



**Table 1: French Trawl positions IBTS 2016** ▲

<b>Station number</b>	<b>Latitude</b>	<b>Longitude</b>	<b>ICES square</b>
U0097	54.4964058	-0.1038572	37E9
U0026	49.8778263	0.4315706	28F0
U0018	50.3087018	0.4538147	29F0
U0019	50.3740034	0.7334847	29F0
U0027	50.0923722	0.7390602	29F0
U0028	50.418521	1.3394921	29F1
U0017	50.6177035	0.1452938	30F0
U0029	50.5651624	1.5099899	30F1
U0036	50.8666785	1.3488674	30F1
U0180	50.6040506	1.453698	30F1
U0035	51.2568532	1.7149993	31F1
U0172	51.3955249	2.2807059	31F2
U0041	51.7428419	1.7482584	32F1
U0173	51.6295174	2.8127259	32F2
U0175	51.8095914	3.602294	32F3
U0042	52.0655919	1.9219489	33F1
U0043	52.4989063	1.9107293	33F1
U0166	52.2567299	2.5397095	33F2
U0086	52.4513017	3.9243799	33F3
U0087	52.3337152	4.4220114	33F4
U0165	52.703881	2.3144386	34F2
U0088	52.7927102	3.9342807	34F3
U0089	52.8454953	4.108564	34F4
U0046	53.435231	0.7534481	35F0
U0096	53.2202826667	1.80585466667	35F1
U0128	53.4105086667	2.839048	35F2
U0080	53.284827	3.8241415	35F3
U0079	53.1585699	4.150046	35F4
U0047	53.933534	0.2621934	36F0
U0095	53.5654883	1.7261563	36F1
U0094	53.578247	2.2235899	36F2
U0129	53.7813616667	3.4737885	36F3
U0078	53.6241998	4.5224847	36F4
U0154	53.6673046	4.842475	36F4
U0144	53.898297	5.7212008	36F5
U0145	53.8634473	6.1344933	36F6
U0067	53.9504191667	7.48194216667	36F7

U0048	54.2972899	0.540378	37F0
U0118	54.4219435	1.5172583	37F1
U0137	54.4048457	4.8528566	37F4
U0143	54.1704141667	5.24832683333	37F5
U0148	54.2527743	5.7370899	37F5
U0146	54.1039725	6.262145	37F6
U0068	54.2728268	7.2585501	37F7
U0112	54.716203	0.6764375	38F0
U0138	54.6394184	5.5236251	38F5

**Table 2: French Trawl positions IBTS 2017** ★

station number	Latitude	Longitude	ICES square
V0001	50.447	1.426	29F1
V0002	50.334	1.347	29F1
V0003	50.384	0.788	29F0
V0009	49.871	0.386	28F0
V0010	49.845	0.198	28F0
V0011	50.107	0.550	29F0
V0015	50.562	0.733	30F0
V0016	50.548	0.382	30F0
V0017	50.619	0.140	30F0
V0018	50.358	0.016	29F0
V0021	50.613	1.459	30F1
V0022	50.867	1.349	30F1
V0023	50.782	1.560	30F1
V0029	52.272	1.897	33F1
V0030	52.310	2.057	33F1
V0031	52.253	2.355	33F2
V0032	52.666	2.331	34F2
V0038	53.979	1.281	36F1
V0039	53.980	0.838	36F0
V0040	54.190	1.360	37F1
V0045	54.496	-0.115	37E9
V0046	54.200	0.502	37F0
V0047	53.955	0.259	36F0
V0052	53.465	0.670	35F0
V0053	53.446	1.535	35F1
V0054	53.635	1.554	36F1
V0060	52.917	1.878	34F1
V0061	53.120	1.741	35F1
V0062	53.718	2.485	36F2
V0068	52.644	3.275	34F3
V0069	52.375	3.436	33F3

V0074	53.368	4.099	35F4
V0075	53.620	3.732	36F3
V0076	53.568	4.336	36F4
V0081	54.185	5.680	37F5
V0082	53.815	5.899	36F5
V0083	53.824	6.704	36F6
V0089	54.310	8.098	37F8
V0090	53.950	7.482	36F7
V0091	54.367	7.069	37F7
V0095	54.228	6.460	37F6
V0096	54.744	6.505	38F6
V0097	54.861	5.859	38F5
V0101	54.098	4.182	37F4
V0102	54.219	3.281	37F3
V0103	54.123	2.825	37F2
V0108	52.732	2.752	34F2
V0109	53.253	2.693	35F2
V0110	53.234	3.429	35F3
V0115	52.557	4.233	34F4
V0116	52.191	4.262	33F4
V0117	51.822	3.640	32F3
V0124	51.685	2.147	32F2
V0125	51.524	1.759	32F1
V0126	51.735	1.742	32F1
V0127	51.959	1.831	32F1
V0133	51.302	1.741	31F1
V0134	51.139	2.222	31F2
V0135	51.395	2.281	31F2
V0138	50.920	1.624	30F1
V0139	51.089	1.964	31F1

### Additional Tows from the International Data Base ●

Country	HaulNo	Year	month	Day	TimeShot	ShootLat	ShootLong	Ices square
FRA	63	1997	2	23	1611	51.20000	2.41670	31F2
FRA	74	2008	2	20	0736	51.18250	2.38750	31F2
FRA	90	2011	2	13	0815	51.18870	2.39090	31F2
NED	55	2010	2	22	1530	51.48900	3.08980	31F3
NED	57	2011	2	21	1355	51.49030	3.13130	31F3
NED	13	2014	1	31	0751	51.46950	3.12830	31F3
NED	56	2009	2	19	1439	51.45060	3.11710	31F3
NED	47	2013	2	14	1428	51.47600	3.17080	31F3
NED	58	2011	2	21	1533	51.62850	3.16680	32F3
NED	55	2009	2	19	1224	51.58950	3.15130	32F3

NED	43	2004	2	16	1525	52.36360	3.40910	33F3
DEN	22	2008	8	26	0518	52.72190	2.75300	34F2
DEN	36	2005	9	13	0529	52.72590	2.75220	34F2
DEN	25	2006	7	31	0431	52.72900	2.75220	34F2
ENG	6	1998	8	16	1438	52.78330	2.71670	34F2
ENG	7	1994	10	23	1602	52.78330	2.73330	34F2
ENG	4	1999	8	20	0615	52.78330	2.71670	34F2
ENG	4	1993	8	10	1908	52.78330	2.73330	34F2
ENG	12	2014	8	9	0530	52.79830	2.76870	34F2
ENG	13	2006	8	14	1642	52.79720	2.76930	34F2
NED	59	2010	2	23	1527	52.84630	3.16110	34F3
NED	58	2005	2	22	1600	52.86760	3.16050	34F3
NED	41	2011	2	10	0742	53.19050	2.18930	35F2
FRA	8	2006	1	31	1236	53.19150	2.20500	35F2
FRA	85	2014	2	13	0721	53.15840	2.25200	35F2
NED	40	2010	2	10	1034	53.21080	2.18060	35F2
FRA	85	2015	2	7	1050	53.16650	2.24030	35F2
FRA	89	2012	2	12	1320	53.16280	2.24510	35F2
NED	33	2008	2	12	0708	53.92560	2.37580	36F2
NED	9	2009	1	28	1300	53.85550	5.21310	36F5
NOR	49	1985	2	11	0934	53.90000	5.16670	36F5
NED	7	2012	1	24	1559	53.76880	6.94730	36F6
GFR	154	1995	6	10	1443	54.38330	6.81670	37F6