

Application for Consent to conduct  
Marine Scientific Research

Date: 23th of June 2018  
REF. : DFO 2018.96

1. General Information

1.1 Cruise name and/or number: IBTS 2019
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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
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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: 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. 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
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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).

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 :**

The same area is covered every years. For IBTS2019 as 2018 see in Figure 2, Annex 1, hauls are sorted randomly few weeks before survey start, from International Data Base. But if required, we can choose other hauls from this data base. 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).

**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 2018, the area covered is shown in 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 IBTS2019 as 2018 see in Figure 2, Annex 1, hauls are sorted randomly few weeks before survey start, from International Data Base. But if required, we can choose other hauls from this data base 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><i>Thalassa</i></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>GSM :</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>Fax : 33.6.20.18.50.20</p> <p>Inmarsat :Tel : 00.870.7.731.600.16 (bridge)</p> <p style="padding-left: 40px;">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> </ul> <p style="padding-left: 40px;">Fax : 33.2.98.22.48.06</p> <ul style="list-style-type: none"> <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</p> <p>- Pacific : 0582 - Indian Ocean: 0581)</p> <p>email : <a href="mailto:TL.Commandant@thalassa.ifremer.fr">TL.Commandant@thalassa.ifremer.fr</a></p> <p>Email Telex C1 : <a href="mailto:ThalassaC1@skyfile-c.com">ThalassaC1@skyfile-c.com</a></p> <p>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
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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
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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 zooplankton and phytoplankton	Vertical samples during the night with a vertical net	A vertical net WP2
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_outils/instrumentation_in_situ/laboratoire_benthos">http://www.ifremer.fr/ezprod/index.php/dyneco/moyens_outils/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 2019 (=minimum date for the beginning of the research survey)  
Date of departure: 18 February 2019 (=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 2019. 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 2019 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)

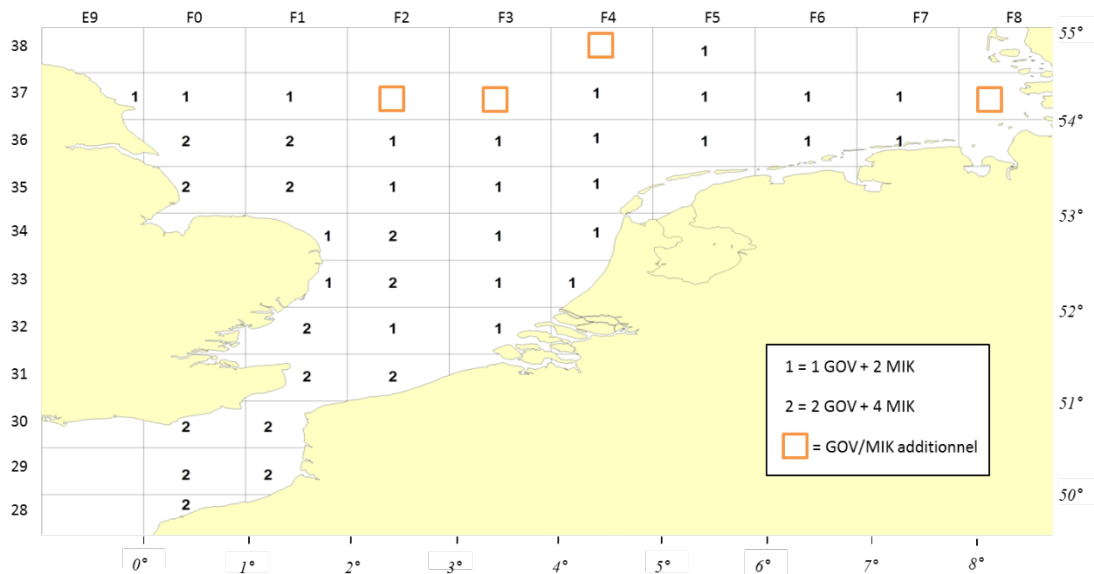
10. Other permits Submitted

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

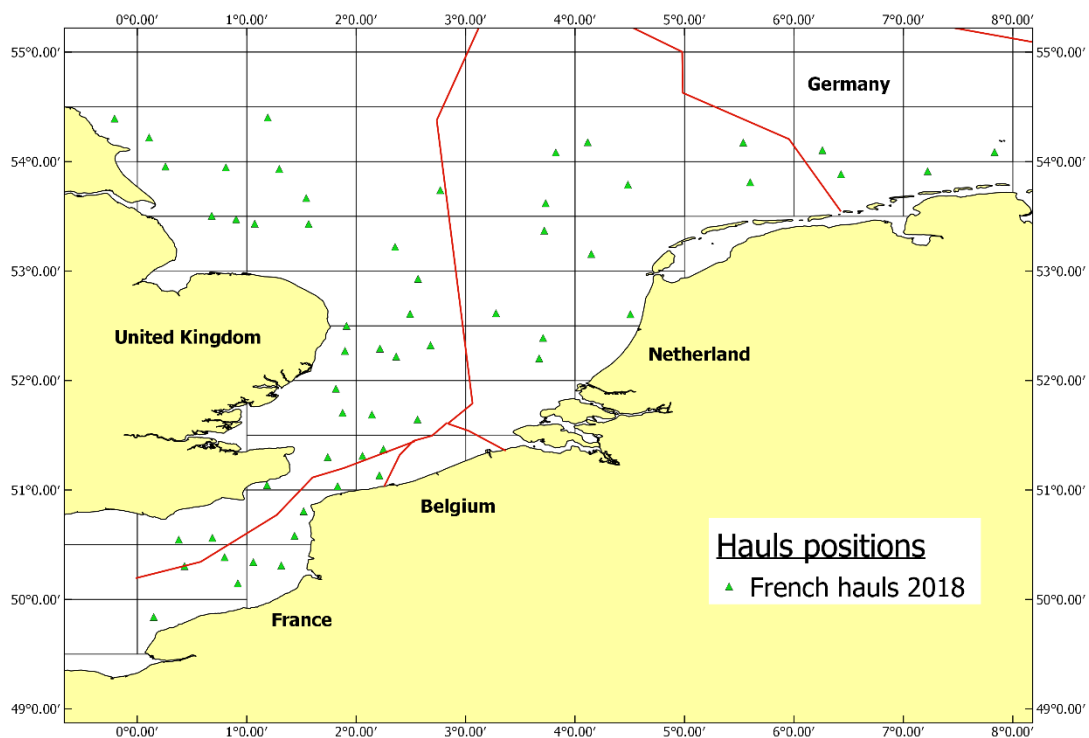
11. List of Supporting Documentation

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

<p>Signature:</p> 	<p>Contact information of the focal point: Name: Arnaud Auber Country: France Affiliation: IFREMER</p>	<p>Address: BP 699 150 quai Gambetta Telephone: + 33 3 21 99 56 74 Fax: + 33 3 21 99 56 01 Email: Arnaud.Auber@ifremer.fr</p>
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**Figure 1: Planning of the French IBTS19 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: Positions of trawl stations in each Exclusive Economic Area of the Southern North Sea and Eastern Channel during IBTS18. 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 communicated every day to coastal authorities.**



**Table 1: French Trawl positions IBTS 2018**

Station	Haul Nb	Year	Month	Day	Shoot_Lat	Shoot_Long	Haul_Lat	Haul_Long	Square	Depth	Meter
W0001	6	2018	1	23	50.3098	1.3153	50.3340	1.3476	29F1	25	3536
W0002	7	2018	1	23	50.3411	1.0596	50.3351	1.1159	29F1	41	4044
W0003	8	2018	1	23	50.3865	0.7971	50.3771	0.7529	29F0	42	3300
W0011	9	2018	1	24	49.8395	0.1497	49.8446	0.1937	28F0	30	3201
W0012	10	2018	1	24	50.3045	0.4314	50.2972	0.3969	29F0	45	2584
W0013	11	2018	1	24	50.5465	0.3786	50.5359	0.3391	30F0	51	3037
W0019	12	2018	1	25	50.5628	0.6856	50.5617	0.7343	30F0	43	3437
W0020	13	2018	1	25	50.5820	1.4365	50.6079	1.4581	30F1	28	3252
W0021	14	2018	1	25	50.8059	1.5194	50.7785	1.5097	30F1	30	3117
W0029	15	2018	1	26	51.0344	1.8302	51.0227	1.7958	31F1	33	2736
W0030	16	2018	1	26	51.1334	2.2118	51.1218	2.1776	31F2	24	2713
W0031	17	2018	1	26	51.3721	2.2485	51.3924	2.2799	31F2	36	3130
W0037	18	2018	1	27	52.2023	3.6719	52.1966	3.7240	33F3	28	3606
W0038	19	2018	1	27	52.3890	3.7075	52.4017	3.6614	33F3	29	3450
W0039	20	2018	1	27	52.6145	3.2772	52.6466	3.2746	34F3	40	3574
W0042	21	2018	1	28	53.3692	3.7183	53.3998	3.7303	35F3	30	3492
W0043	22	2018	1	28	53.6204	3.7310	53.6521	3.7252	36F3	39	3553
W0044	23	2018	1	28	53.7389	2.7681	53.7656	2.7948	36F2	36	3452
W0051	24	2018	1	29	53.9551	0.2571	53.9256	0.2654	36F0	49	3331
W0052	25	2018	1	29	54.2192	0.1076	54.1816	0.1096	37F0	57	4178
W0053	26	2018	1	29	54.3931	-0.2082	54.4185	-0.2332	37E9	61	3255
W0059	27	2018	1	30	53.9472	0.8090	53.9454	0.8588	36F0	48	3265
W0060	28	2018	1	30	53.5042	0.6795	53.4721	0.6716	36F0	89	3611
W0061	29	2018	1	30	53.4327	1.0725	53.4568	1.0599	35F1	47	2803
W0068	30	2018	1	31	52.4992	1.9113	52.5182	1.9275	33F1	31	2378
W0069	31	2018	1	31	52.2702	1.8972	52.2985	1.9000	33F1	29	3141
W0070	32	2018	1	31	52.2919	2.2168	52.2662	2.1999	33F2	43	3077
W0071	33	2018	1	31	52.6083	2.4920	52.5920	2.4487	34F2	51	3442
W0077	34	2018	2	1	53.1557	4.1480	53.1252	4.1295	35F4	31	3608
W0078	35	2018	2	1	52.6058	4.5053	52.6312	4.5296	34F4	18	3260
W0084	36	2018	2	3	53.7889	4.4829	53.8077	4.5397	36F4	41	4271
W0085	37	2018	2	3	54.1770	4.1154	54.1448	4.1080	37F4	49	3605
W0086	38	2018	2	3	54.0834	3.8235	54.0512	3.8237	37F3	48	3574
W0093	39	2018	2	4	53.8845	6.4297	53.8916	6.4820	36F6	26	3521
W0094	40	2018	2	4	53.9120	7.2213	53.9052	7.2844	36F7	25	4197
W0095	41	2018	2	4	54.0867	7.8326	54.0946	7.8841	37F7	44	3466
W0101	42	2018	2	5	54.1043	6.2598	54.1087	6.3110	37F6	31	3365
W0102	43	2018	2	5	54.1739	5.5363	54.1571	5.4925	37F5	40	3401
W0103	44	2018	2	5	53.8114	5.5998	53.8172	5.5457	36F5	33	3604
W0109	45	2018	2	6	53.6670	1.5433	53.6307	1.5554	36F1	87	4110
W0110	46	2018	2	6	53.9327	1.2969	53.9640	1.2835	36F1	42	3596
W0111	47	2018	2	6	54.4029	1.1918	54.3922	1.2415	37F1	55	3423

W0116	48	2018	2	7	53.4727	0.9027	53.4480	0.9404	35F0	21	3710
W0117	49	2018	2	7	53.4302	1.5652	53.4596	1.5808	35F1	30	3425
W0118	50	2018	2	7	53.2207	2.3551	53.2408	2.3227	35F2	41	3100
W0124	51	2018	2	8	52.2188	2.3649	52.2566	2.3541	33F2	43	4253
W0125	52	2018	2	8	52.3216	2.6792	52.3375	2.7316	33F2	44	3976
W0126	53	2018	2	8	52.9293	2.5648	52.9597	2.5737	34F2	39	3427
W0132	54	2018	2	9	51.6446	2.5601	51.6199	2.5400	32F2	42	3090
W0133	55	2018	2	9	51.6886	2.1434	51.6631	2.1691	32F2	48	3359
W0134	56	2018	2	9	51.7053	1.8756	51.6743	1.8604	32F1	48	3606
W0135	57	2018	2	9	51.9252	1.8142	51.9535	1.8294	32F1	33	3310
W0140	58	2018	2	10	51.3124	2.0574	51.3344	2.1024	31F2	40	3969
W0141	59	2018	2	10	51.3003	1.7398	51.2707	1.7238	31F1	43	3465
W0142	60	2018	2	10	51.0444	1.1844	51.0517	1.2337	31F1	23	3542
W0144	61	2018	2	11	50.1480	0.9182	50.1569	0.9738	29F0	34	4077

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