

Application for Consent to conduct  
Marine Scientific Research

Date: 07th of June 2019  
REF: DFO-PON-2019-93

1. General Information

1.1 Cruise name and/or number: IBTS 2020
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1.2 Sponsoring Institution(s):	
Name:	IFREMER
Address:	Centre Bretagne - ZI de la Pointe du Diable - CS 10070 - 29280 Plouzané France
Name of Director:	François Houiller

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
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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
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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:
<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 Copehagen (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 IBTS2020 as 2019 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/project.

**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 2019, 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 IBTS2020 as 2019 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.

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> <ul style="list-style-type: none"> <li>- Pacific : 0582 - Indian Ocean: 0581)</li> </ul> <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

4.2 Particulars of Aircraft: NO Aircraft

Name:	
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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)		
Types of samples and Measurements:	Methods to be used:	Instruments to be used:
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 : EK 80 and Multibeam echosounder ME 70

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: 09 January 2020 (=minimum date for the beginning of the research survey)  
Date of departure: 01 February 2020 (=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: 09 January 2020).  
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 = 01 February 2020.

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

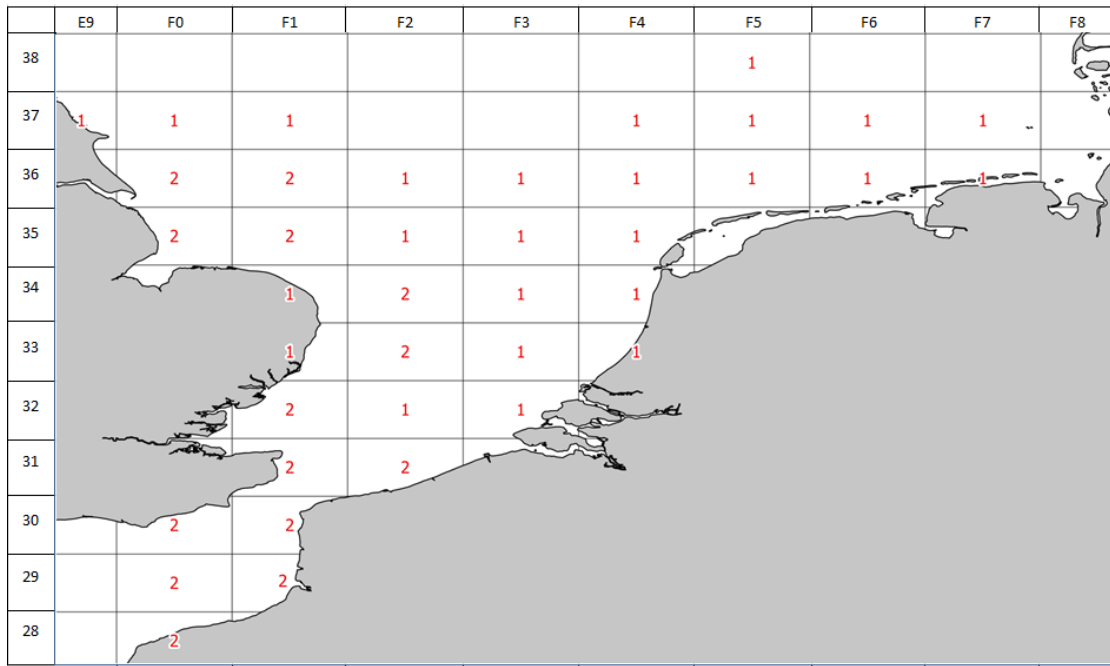
10.1 Indicate other types of coastal state permits anticipated for this research (received or Pending):

11. List of Supporting Documentation

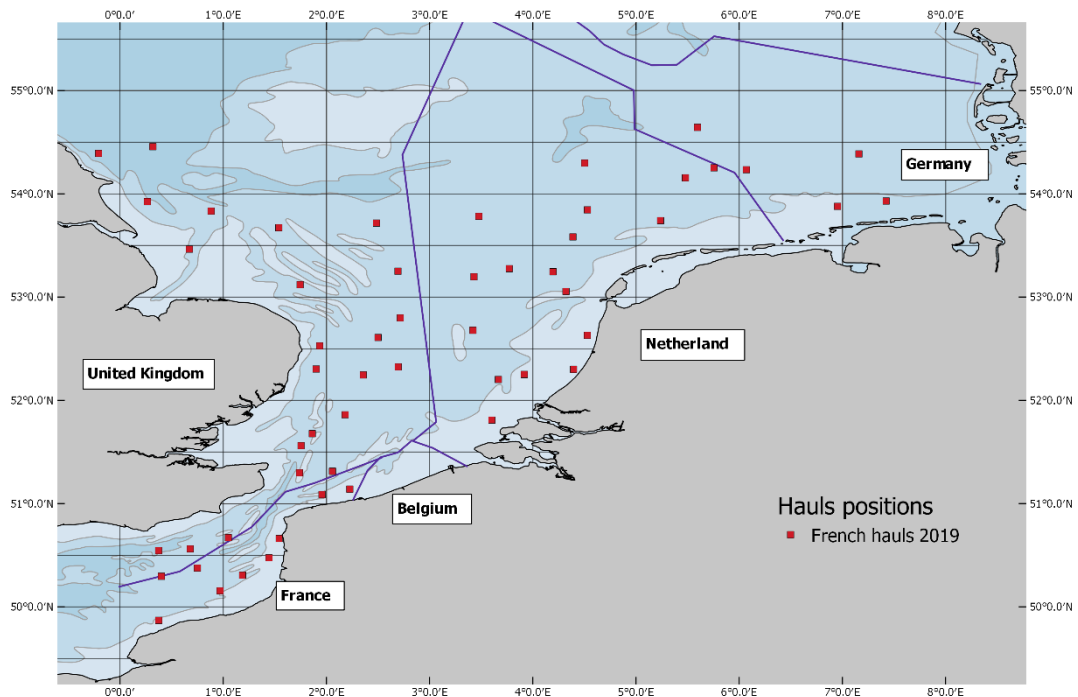
11.1 List of attachments, such as additional forms required by the coastal State, etc.:

Signature:	Contact information of the focal point:	Address: BP 699 150 quai Gambetta
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	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
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**Figure 1: Initial planning of the French IBTS19 Survey in the Southern North Sea. In each ICES squares, Thalassa has to make 1 or 2 hauls with the GOV 36/47 during the day. At night 2 or 4 MIK stations (larval net).**



**Figure 2: Positions of trawl stations in each Exclusive Economic Area of the Southern North Sea and Eastern Channel during IBTS19. 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 the squares. 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 2019**

StNo	HaulNo	Year	Month	Day	Stratum	ShootLat	ShootLong	HaulLat	HaulLong	Depth
X0001	1	2019	1	22	29F1	50.4757852	1.4430384	50.4448629	1.425119	28
X0008	2	2019	1	23	28F0	49.8700778	0.3743468	49.8776182	0.4292471	28
X0010	3	2019	1	23	29F0	50.2966475	0.40068083	50.3069185	0.44862733	49
X0011	4	2019	1	23	29F0	50.3767242	0.7496805	50.3844882	0.78917917	38
X0018	5	2019	1	24	31F1	51.0887084	1.9566519	51.0837569	1.9282683	37
X0019	6	2019	1	24	31F2	51.1408303	2.22565217	51.1269492	2.1930445	26
X0025	7	2019	1	25	33F3	52.2516993	3.9167705	52.2687666	3.8696392	24
X0026	8	2019	1	25	33F4	52.3009962	4.39465933	52.3253362	4.41481767	17
X0027	9	2019	1	25	34F4	52.6299395	4.52794183	52.6028225	4.50160833	17
X0033	10	2019	1	26	36F5	53.7415391	5.2362855	53.7471778	5.2939569	31
X0034	11	2019	1	26	37F5	54.1557119	5.4782969	54.1737312	5.5323313	40
X0035	12	2019	1	26	37F5	54.2520946	5.7543361	54.2549738	5.7071702	40
X0041	13	2019	1	27	36F6	53.8789506	6.952406	53.8680503	6.8995556	22
X0042	14	2019	1	27	36F7	53.9303517	7.4225392	53.9459104	7.4724764	26
X0043	15	2019	1	27	37F7	54.3869011	7.1584296	54.4085452	7.1225246	40
X0049	16	2019	1	28	37F6	54.2342967	6.068355	54.2417067	6.1148671	38
X0050	17	2019	1	28	38F5	54.6436459	5.5953316	54.6400238	5.54921	44
X0056	18	2019	1	29	35F4	53.2456006	4.1949213	53.2192008	4.2192455	29
X0057	19	2019	1	29	35F4	53.0556329	4.3202547	53.0313357	4.304612	32
X0063	20	2019	1	31	35F3	53.1979727	3.4290652	53.2285741	3.4307446	33
X0064	21	2019	1	31	35F3	53.2765528	3.770956	53.2857937	3.8232845	26
X0065	22	2019	1	31	36F3	53.7832817	3.4770903	53.8154237	3.47025033	36
X0071	23	2019	2	1	37F4	54.2980579	4.5024787	54.266677	4.5007439	49
X0072	24	2019	2	1	36F4	53.8450716	4.528999	53.8499841	4.5758889	40
X0073	25	2019	2	1	36F4	53.5833258	4.3874891	53.5706642	4.3451567	28
X0078	26	2019	2	2	36F2	53.7176055	2.4846024	53.7236988	2.4326621	33
X0079	27	2019	2	2	35F2	53.2513699	2.6928648	53.2265062	2.7135583	32
X0080	28	2019	2	2	34F2	52.7993862	2.7157656	52.8170297	2.7575969	39
X0087	29	2019	2	3	35F0	53.4648404	0.6709477	53.4987224	0.6770728	89
X0088	30	2019	2	3	36F0	53.8328964	0.8822224	53.8364512	0.92275467	40
X0089	31	2019	2	3	36F1	53.6730348	1.5383922	53.6426276	1.55012	88
X0097	32	2019	2	4	36F0	53.9250138	0.265121	53.958847	0.2580968	51
X0098	33	2019	2	4	37F0	54.456935	0.3180168	54.4276391	0.3077564	65
X0099	34	2019	2	4	37E9	54.3916922	-0.20730067	54.411892	-0.22643483	60
X0106	35	2019	2	5	35F1	53.1209998	1.7450457	53.1445155	1.7748624	36
X0107	36	2019	2	5	34F1	52.5280664	1.9345414	52.5018647	1.910537	30
X0108	37	2019	2	5	33F1	52.3040968	1.9004856	52.2860585	1.8987411	28
X0114	38	2019	2	6	32F3	51.8097673	3.6019619	51.8230595	3.6422677	23
X0115	39	2019	2	6	33F3	52.2024513	3.6662024	52.1971787	3.7170639	27
X0116	40	2019	2	6	34F3	52.6786814	3.4191405	52.7107937	3.401196	29
X0123	41	2019	2	7	33F2	52.2464043	2.3565414	52.218147	2.364429	42

X0124	42	2019	2	7	33F2	52.3247929	2.6957035	52.3359437	2.735672	44
X0125	43	2019	2	7	34F2	52.6088494	2.4994137	52.5943924	2.4572373	50
X0130	44	2019	2	8	32F2	51.86126	2.180951	51.8346735	2.1764355	49
X0131	45	2019	2	8	32F1	51.677615	1.862381	51.7020123	1.8759425	48
X0132	46	2019	2	8	32F1	51.5610947	1.7541617	51.5390507	1.7561508	43
X0135	47	2019	2	9	31F1	51.2994132	1.7386143	51.275027	1.725182	40
X0136	48	2019	2	9	31F2	51.313318	2.05770833	51.3301005	2.09251217	37
X0141	49	2019	2	10	30F1	50.6623997	1.5416263	50.690037	1.5294132	22
X0143	50	2019	2	10	30F1	50.67059	1.0495845	50.6616201	1.0097184	50
X0148	51	2019	2	11	30F0	50.545371	0.3736282	50.5314768	0.3202483	46
X0149	52	2019	2	11	30F0	50.5627763	0.6794086	50.5618148	0.7277391	41
X0150	53	2019	2	11	29F0	50.1561277	0.9688602	50.1493896	0.9299195	34
X0156	54	2019	2	12	29F1	50.3076416	1.1863169	50.3205063	1.2260097	31

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