Organisation Hydrographique Internationale
OHI
International Hydrographic Organization

4b, quai Antoine Ier
B.P. 445
MC 98011 MONACO CEDEX
PRINCIPAUTE DE MONACO

Tél. : +377 93 10 81 00
Fax : +377 93 10 81 40
Mél : info@iho.int
Web : www.iho.int

Dossiers de l'OHI n° S3/8151 & S3/6004

LETTRE CIRCULAIRE 31/2019
26 juin 2019

DEMANDE D'APPROBATION D'UNE NOUVELLE RESOLUTION DE L'OHI SUR LES TABLES DE MAREES NUMERIQUES

Références :

A. Publication M-3, 2ème Edition 2010 – Mise à jour d'août 2018 – *Résolutions de l'OHI*.

B. Lettre circulaire de l'OHI 20/2019, du 28 mars – *Système de formulaire en ligne de l'OHI pour la réponse aux lettre circulaires et pour les contributions aux publications de l'OHI (P-5 et C-55).*

Madame la Directrice, Monsieur le Directeur,

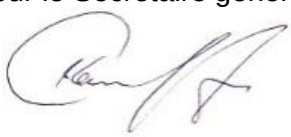
1. La présente lettre circulaire requiert l'approbation par les Etats membres de la proposition de nouvelle résolution de l'OHI 01/2019 – *Tables de marées et de courants de marée numériques* – soumise par le groupe de travail sur les marées, le niveau de la mer et les courants (TWCWG) et avalisée par le Comité des services et des normes hydrographiques (HSSC) lors de sa 11ème réunion, tenue au Cap, Afrique du Sud, en mai 2019.

2. Le projet de proposition de nouvelle résolution est fourni en Annexe A (en anglais uniquement).

3. Il est demandé aux Etats membres de tenir compte de l'aval du HSSC et d'envisager l'adoption de cette proposition en donnant leur réponse dès que possible, et au plus tard le **31 août 2019**, par courriel (cl-lc@iho.int) ou par télécopie (+377 93 10 81 40) s'ils utilisent le bulletin de vote fourni en Annexe B ; il est toutefois préférable que les Etats membres utilisent le système de formulaire en ligne de l'OHI (cf. référence B) via le lien suivant : https://IHO.formstack.com/forms/cl31_2019

Veuillez agréer, Madame la Directrice, Monsieur le Directeur, l'assurance de ma haute considération,

Pour le Secrétaire général,



Abri KAMPFER
Directeur

Annexes :
A. Projet de proposition de nouvelle résolution de l'OHI 01/2019.
B. Bulletin de vote.

Annexe A à la LC de l'OHI 31/2019

Proposition de nouvelle résolution de l'OHI 01/2019
(*en anglais uniquement*)

TITLE	Reference	Last amendment (CL or IHC)	1st Edition Reference
Digital Tide and Tidal Current Tables	**01/2019**	**xx/2019**	**Ver 1.0**

1 It is resolved that member Hydrographic Organizations (HO) may choose to publish their tide and tidal current tables in either paper format or digitally. If digitally, they can be distributed either through the HO's web site, or representative complement or via portable media such as a DVD.

General Guidelines for Digital Tide and Tidal Current Tables

2 It is resolved that digital tide and tidal current tables should adhere to all the same requirements as existing paper tide and tidal current tables as specified in IHO Programme 2 "Hydrographic Services and Standards" Section 2.2 – Tides and Water Levels

3 It is resolved that the issuing office should provide documentation on how to install or read the electronic tables, minimum computer specifications how to obtain product support and general information on the Digital Tide and Tidal Current Tables. This information should be provided in either hardcopy written form (for example, on a separate sheet of paper or on the cover of the disk or other media), or electronically in a plain ASCII text 'readme.txt' type of file. This file should also include user license and/or condition of use information.

4 It is resolved that the issuing office should provide its formal name, mailing address; web url and point of contact information on the cover of the media. It should also provide information on the production of the tables (including both address and website), information on how to obtain annual updates, and how to obtain interim updates or errata information.

5 It is resolved that the digital tide and tidal current tables should include a statement concerning the standing of the digital tables as meeting the applicable maritime regulations, either SOLAS and/or local country carriage requirements.

Formats for Digital Tide and Tidal Current Tables

6 It is resolved that there shall be two allowable formats for digital tide and tidal current tables.

A. Scanned Images of Tide and Tidal Current Tables: This format consists of scanned images of the paper tide tables. This format should have the following attributes.

B. Electronically generated Tide and Tidal Current Predictions: This format consists of software and a user interface that calculates tide and tidal current predictions from stored harmonic constituents or time and range offsets.

Detailed Specifications for Digital Tide Tables – Scanned Images of Tide Tables:

7 It is resolved that Scanned Images of Tide Tables should follow the following specifications.

a. Should be a faithful reproduction of all the pages of printed tide tables.

b. The images should be formatted in a widely available, common format. Examples formats include, but not limited to, PDF, tiff, Jpeg, Gif. If PDF files are provided, then information on how to download Adobe© Reader must be provided.

c. If multiple books are published, then each book should be located within its own folder and clearly identified.

d. No modification of the scanned images is permitted by users.

Detailed Specifications for Digital Tide Tables – Electronically Generated Tide Predictions

8 It is resolved that Electronically Generated Tide Predictions should follow the following specifications:

a. Station Selection: It is recommended that station selections can either be map based or list based, and should be organized by water body.

b. Station Information: It is recommended that the following information be included with each station;
Station Name and Number (or ID) as appropriate
Body of Water Descriptor (if appropriate)
Latitude and Longitude (following ISO 6709 convention, stated in degrees and 6 decimals)
Horizontal and Vertical Datum convention
Location Map with nearby prediction stations identified
URL to station or data portal.

c. It is recommended that Earth-Moon-Sun Astronomical Calendar Information (Tabular and/or integrated with graphical data output) be included.

d. It is recommended that Sunrise/Sunset Calendar Information (Tabular and/or integrated with graphical data output)

e. It is recommended that the default reference datum is the Chart Datum used by the Country furthermore, it is recommended that the user have the ability to reference predictions to other tidal datums supported by the HO (such as LAT, HAT, MHW, MSL) and user identified datums such as a national geodetic or ellipsoidal datum or other coastal engineering or threshold datums that are pertinent.

f. It is recommended that data displays and tables can be toggled to both in Metric or English units, with default depending upon country

g. It is recommended that the time displayed is the legal local time as default, with user selected option for UTC/GMT, daylight savings time, etc. Legal time includes daylight savings time if applicable. Furthermore, when time zone information is displayed it should follow the convention that negative time zone offsets are used for east longitude and positive offsets for west longitude.

h. It is recommended that the following tide prediction source metadata information be provided;
Harmonic Constituents or Time and Range Correction to Reference Station,
Dates of Harmonic Analyses time series used to create the set of Harmonic Constituents used in the prediction,
Dates of the observations used to create time and height corrections (for nonharmonic based predictions) to a reference Station,
Links to the list of the Harmonic Constituents used in the Prediction. Furthermore, the display of the Harmonic Constituents should adhere to the IHO National Tidal Constituent Banks Resolution 2/1977 as amended 42/2000 A6.8
The name of the Harmonic Analysis program used to generate the harmonic constituents.

i. It is recommended that the HO provide and display tidal sea level amplitude prediction with a minimum of 4 decimals precision (for metric system) if possible.

j. It is recommended that users have the ability to obtain output in common formats such as PDF, TXT, XML, CSV, S-112 single point formats

k. It is recommended that additional information be provide special warning explaining areas of anomalous tidal conditions, special datums, or tidal based hazards to navigations (dual high or low waters, tidal bores, river flow dependencies and river datums, frequent non-tidal conditions, etc..)

l. It is recommended, when applicable, that estimates of uncertainty in the predicted times and heights of high and low waters be provided to users.

Detailed Specifications for Graphical Display of Electronic Tide Predictions

9 It is resolved that the predictions have the ability to obtain graphical and tabular output for desired time period (either historical and into the future) and should contain the following attributes with the objective not to prescribe a specific graphical view but rather to identify common elements that transcend all types of graphs:

a It is recommend that the predictions can be displayed as discrete points or a continuous curve using a curve fit routine to times and heights of high and low waters or to the time series values.

b It is recommended that all axes should be clearly labelled

c It is recommended that time series data should have a minimum, 1- hour increments

d It is recommended that times and heights of predicted high and low tides should be provided

e It is recommended that the default datum should be the same as chart datum for the location of the prediction

f It is recommended that the tidal height units default should be the same as the HO's printed tables

g It is recommended that the display should include station information (as defined above)

h It is recommended that the display include the name and/or the insignia of the source authority organization

i It is recommended that the display should have the option to view the tide prediction numerical values used to create the graphic.

j It is recommended that the display of the graphical data should be able to be adjusted to suit daytime, twilight, and night time viewing

Detailed Specifications for Digital Tidal Current Tables

10 It is resolved that Digital Tidal Current Tables can be in the same two formats as Digital Tide Tables and the same requirements that apply to digital tide tables pertain to tidal current tables.

11 It is resolved that electronically generated Tidal Current Predictions do have additional specifications as identified:

a It is recommended that the depth of prediction be included in the metadata and include a the descriptor that the depth is either from the surface down or from the bottom up

b It is recommended, if applicable, flood and ebb current direction (referenced to True North) be presented.

c It is recommended that for graphical display of tidal currents the default speed units should be knots

d It is recommended that for graphical display of tidal currents the default direction units should be degrees (referenced to true north).

Examples of Digital Tide Tables

USA - NOAA Example - Scanned Tide Table

80

Albany, New York, 2015

Times and Heights of High and Low Waters

January

	Time	Height		Time	Height
	h m	ft		h m	ft
1 Th	0048	5.1	16 F	0026	4.2
	0741	−0.3		0705	0.4
	1317	5.5		1241	5.0
	2026	−0.4		2006	0.4
2 F	0142	5.1	17 Sa	0121	4.3
	0833	−0.3		0803	0.3
	1407	5.5		1331	5.2
	2120	−0.4		2101	0.2
3 Sa	0233	5.1	18 Su	0211	4.4
	0922	−0.3		0858	0.1
	1454	5.6		1417	5.4
	2210	−0.5		2153	0.0
4 Su ○	0321	5.1	19 M	0257	4.6
	1009	−0.2		0952	−0.1
	1538	5.5		1503	5.6
	2256	−0.4		2243	−0.2
5 M	0408	5.0	20 Tu ●	0343	4.8
	1054	−0.1		1044	−0.2
	1621	5.4		1549	5.7
	2341	−0.3		2331	−0.4
6 Tu	0454	4.9	21 W	0430	4.9
	1136	0.1		1136	−0.4
	1702	5.3		1639	5.7
7 W	0022	−0.2	22 Th	0018	−0.5
	0540	4.8		0520	5.0
	1216	0.2		1227	−0.4
	1742	5.1		1733	5.7
8 Th	0103	0.0	23 F	0106	−0.5
	0625	4.7		0612	5.1
	1255	0.4		1320	−0.4
	1822	5.0		1830	5.6
9 F	0141	0.1	24 Sa	0154	−0.5
	0710	4.6		0708	5.2
	1334	0.5		1414	−0.4
	1901	4.9		1931	5.5
10 Sa	0219	0.2	25 Su	0244	−0.4
	0755	4.6		0806	5.2
	1416	0.6		1511	−0.3
	1940	4.8		2032	5.4
11 Su	0256	0.3	26 M ◐	0336	−0.3
	0839	4.6		0904	5.3
	1503	0.7		1610	−0.2
	2021	4.6		2132	5.2
12 M	0334	0.4	27 Tu	0429	−0.3
	0922	4.7		1002	5.3
	1559	0.8		1710	−0.1
	2115	4.4		2231	5.1
13 Tu ◑	0416	0.4	28 W	0524	−0.2
	1006	4.7		1101	5.3
	1701	0.8		1810	−0.1
	2220	4.3		2330	5.0
14 W	0507	0.5	29 Th	0620	−0.1
	1055	4.8		1159	5.3
	1806	0.8		1908	−0.1
	2325	4.2			
15 Th	0605	0.5	30 F	0028	5.0
	1148	4.9		0715	−0.1
	1908	0.7		1255	5.3
				2004	−0.2
			31 Sa	0123	5.1
				0808	−0.1
				1347	5.4
				2057	−0.3

February

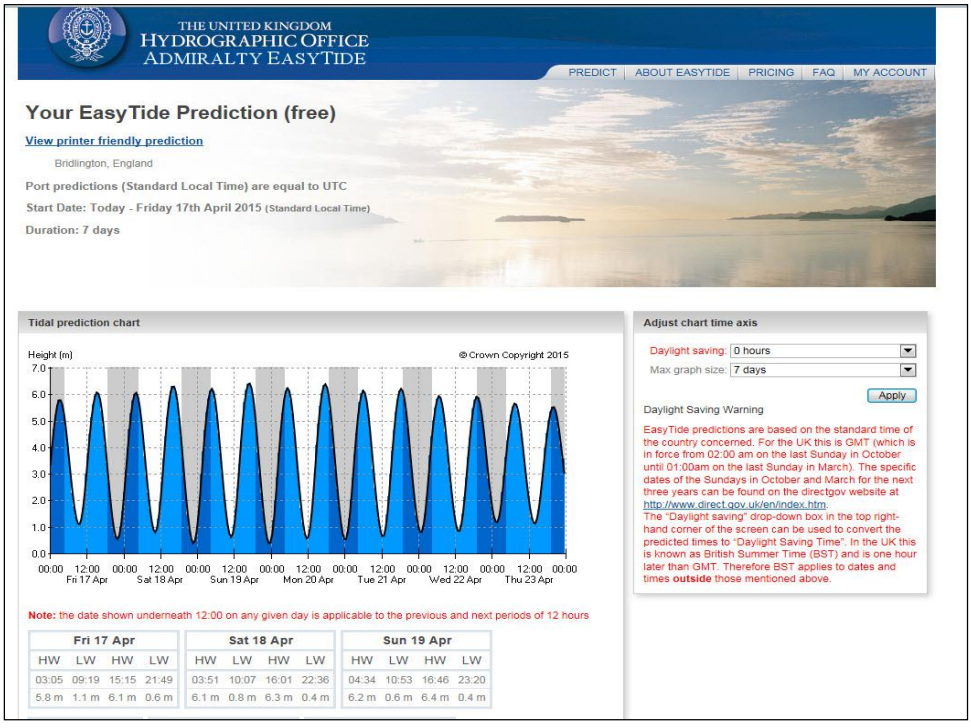
	Time	Height		Time	Height
	h m	ft		h m	ft
1 Su	0214	5.2	16 M	0144	4.8
	0859	−0.1		0836	0.3
	1435	5.4		1353	5.6
	2145	−0.3		2127	0.1
2 M	0302	5.2	17 Tu	0234	5.0
	0946	−0.1		0933	0.1
	1519	5.4		1445	5.7
	2230	−0.3		2217	−0.1
3 Tu ○	0348	5.2	18 W ●	0322	5.3
	1030	0.0		1027	−0.2
	1600	5.4		1535	5.9
	2313	−0.2		2306	−0.2
4 W	0431	5.1	19 Th	0409	5.4
	1112	0.1		1119	−0.3
	1640	5.3		1626	5.9
	2352	−0.1		2353	−0.3
5 Th	0513	5.1	20 F	0458	5.6
	1152	0.2		1211	−0.4
	1718	5.2		1719	5.9
6 F	0029	0.0	21 Sa	0040	−0.3
	0553	5.0		0549	5.6
	1231	0.3		1303	−0.3
	1754	5.1		1815	5.8
7 Sa	0104	0.2	22 Su	0128	−0.2
	0632	5.0		0642	5.6
	1310	0.5		1356	−0.2
	1826	5.0		1913	5.6
8 Su	0137	0.3	23 M	0216	−0.1
	0706	5.0		0739	5.6
	1350	0.6		1452	−0.1
	1851	4.9		2012	5.5
9 M	0208	0.4	24 Tu	0307	0.1
	0730	5.0		0837	5.6
	1434	0.7		1549	0.1
	1924	4.8		2111	5.4
10 Tu	0240	0.5	25 W ◐	0400	0.2
	0752	5.1		0935	5.5
	1526	0.8		1647	0.2
	2009	4.6		2210	5.3
11 W ◑	0320	0.5	26 Th	0455	0.4
	0832	5.2		1034	5.4
	1627	0.9		1746	0.3
	2109	4.5		2309	5.2
12 Th	0413	0.7	27 F	0552	0.5
	0923	5.2		1133	5.4
	1733	0.9		1843	0.3
	2234	4.4			
13 F	0520	0.7	28 Sa	0007	5.3
	1028	5.2		0648	0.5
	1837	0.8		1231	5.4
	2348	4.4		1938	0.2
14 Sa	0631	0.7			
	1149	5.2			
	1938	0.6			
15 Su	0050	4.5			
	0736	0.5			
	1256	5.4			
	2034	0.4			

March

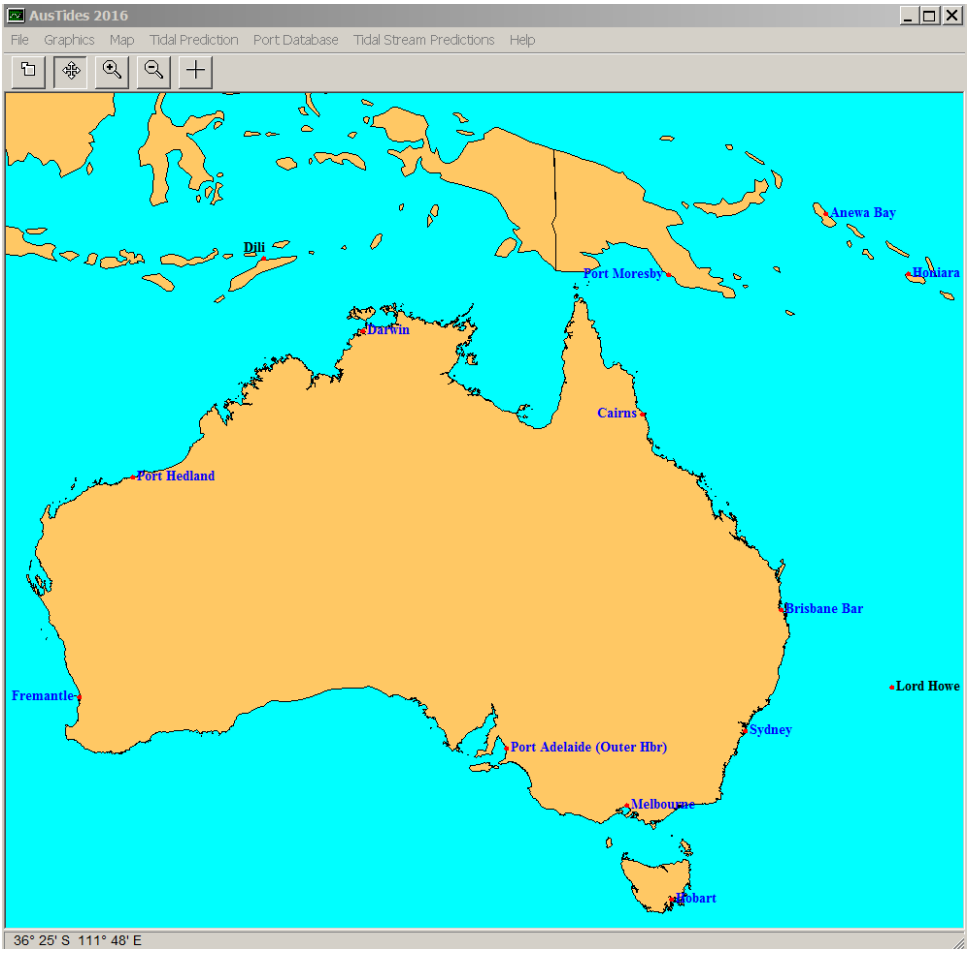
	Time	Height		Time	Height
	h m	ft		h m	ft
1 Su	0102	5.4	16 M	0023	5.1
	0743	0.5		0715	0.9
	1324	5.5		1230	5.7
	2029	0.1		2006	0.7
2 M	0153	5.5	17 Tu	0120	5.4
	0834	0.4		0817	0.6
	1413	5.6		1333	5.9
	2117	0.1		2059	0.5
3 Tu	0241	5.6	18 W	0212	5.7
	0922	0.4		0915	0.3
	1457	5.6		1428	6.0
	2201	0.1		2150	0.3
4 W	0325	5.7	19 Th	0300	6.0
	1006	0.4		1009	0.1
	1538	5.6		1519	6.2
	2241	0.1		2239	0.1
5 Th	0406	5.7	20 F ●	0347	6.2
	1049	0.4		1102	−0.1
	1617	5.5		1610	6.2
	2319	0.3		2326	0.1
6 F	0444	5.6	21 Sa	0435	6.3
	1130	0.4		1154	−0.1
	1654	5.4		1702	6.1
	2354	0.4			
7 Sa	0520	5.6	22 Su	0013	0.2
	1209	0.5		0523	6.3
	1728	5.3		1245	0.0
				1756	6.0
8 Su	0027	0.5	23 M	0100	0.3
	0550	5.6		0615	6.2
	1249	0.6		1337	0.1
	1757	5.2		1853	5.8
9 M	0058	0.6	24 Tu	0148	0.5
	0607	5.7		0710	6.1
	1330	0.7		1431	0.3
	1821	5.2		1951	5.7
10 Tu	0129	0.7	25 W	0238	0.7
	0627	5.8		0807	5.9
	1414	0.8		1526	0.5
	1855	5.1		2049	5.6
11 W	0202	0.8	26 Th	0331	0.9
	0704	5.8		0906	5.8
	1504	1.0		1622	0.6
	1942	5.0		2147	5.5
12 Th	0245	0.9	27 F ◐	0426	1.0
	0751	5.8		1005	5.6
	1602	1.1		1718	0.7
	2041	4.9		2245	5.5
13 F ◑	0341	1.0	28 Sa	0522	1.1
	0844	5.8		1104	5.6
	1705	1.1		1814	0.8
	2201	4.9		2342	5.6
14 Sa	0453	1.1	29 Su	0619	1.2
	0947	5.6		1202	5.6
	1808	1.1		1907	0.7
	2318	4.9			
15 Su	0607	1.1	30 M	0037	5.7
	1110	5.6		0714	1.1
	1909	0.9		1256	5.6
				1957	0.6
			31 Tu	0128	5.9
				0806	1.0
				1346	5.7
				2043	0.6

Time meridian 75° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean low water during lowest river stages which is the chart datum of soundings.

UKHO Example



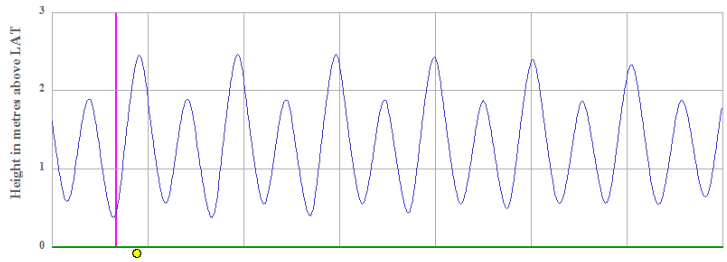
Australian Example



BRISBANE BAR

Local Standard Time Zone: -10:00 U.T. | **27° 22' S 153° 10' E** | **Year 2016**

PREDICTION DATUM below MSL: 1.31 (m) | **Port 59980**



16:00 0.4m

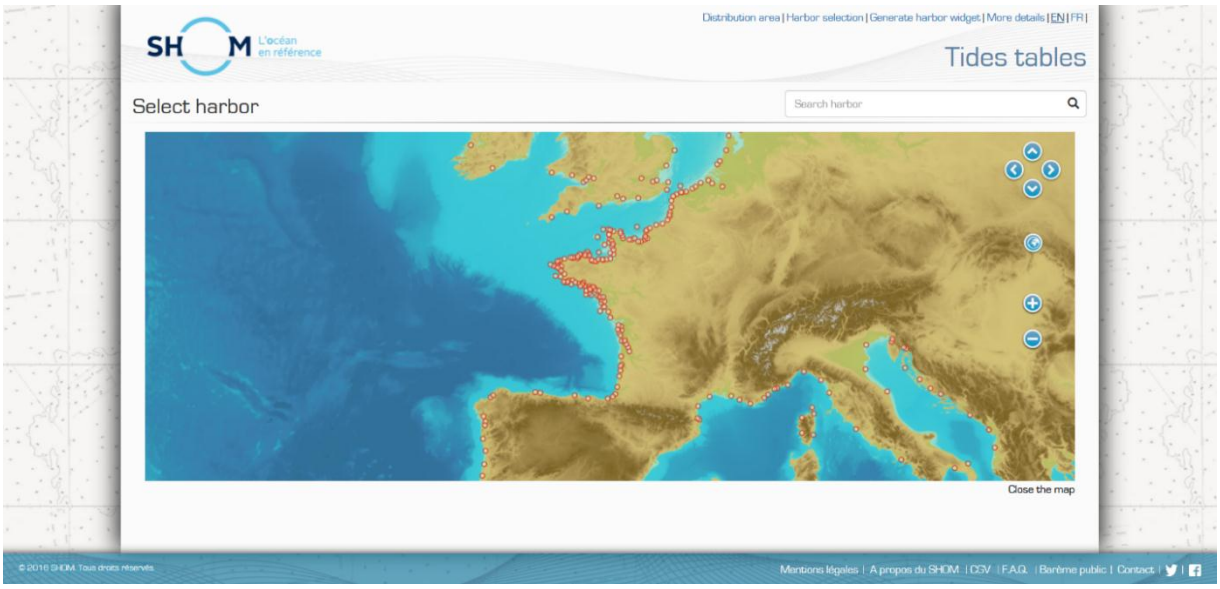
Jun 20 Mo		21 Tu		22 We		23 Th		24 Fr		25 Sa		26 Su	
Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m
0343	0.6	0423	0.6	0503	0.5	0543	0.5	0624	0.5	0024	2.4	0109	2.3
0911	1.9	0951	1.9	1032	1.9	1115	1.9	1200	1.9	0707	0.5	0755	0.5
1520	0.4	1557	0.4	1635	0.4	1713	0.4	1755	0.5	1250	1.9	1347	1.9
2150	2.4	2227	2.5	2304	2.5	2343	2.4			1843	0.6	1939	0.6

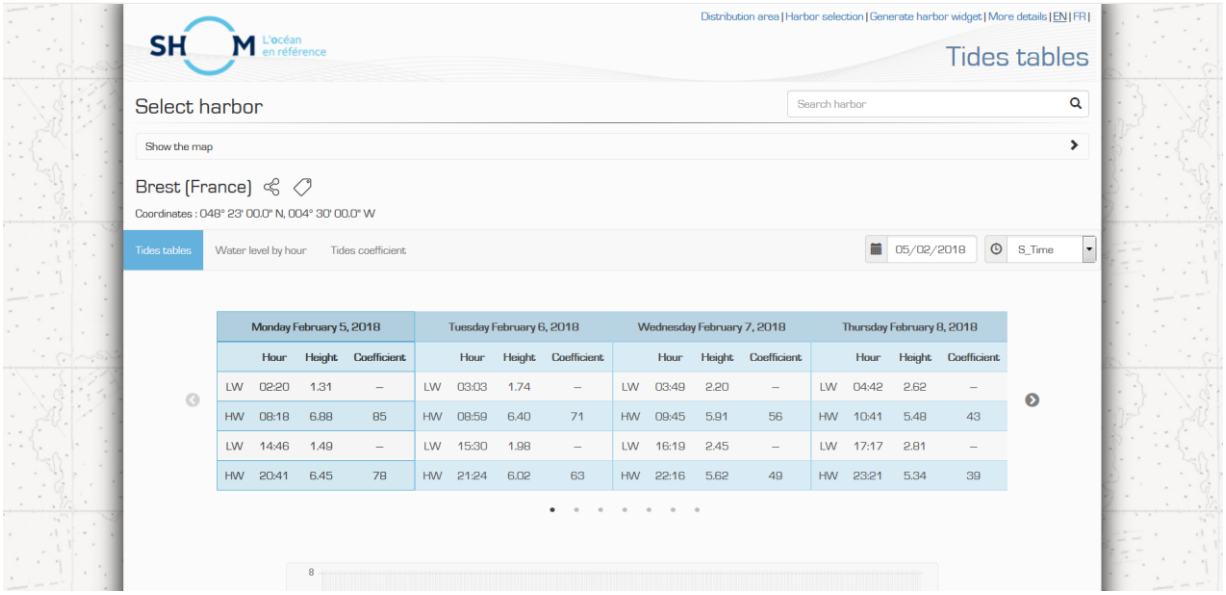
Moon phases supplied by Sydney Observatory

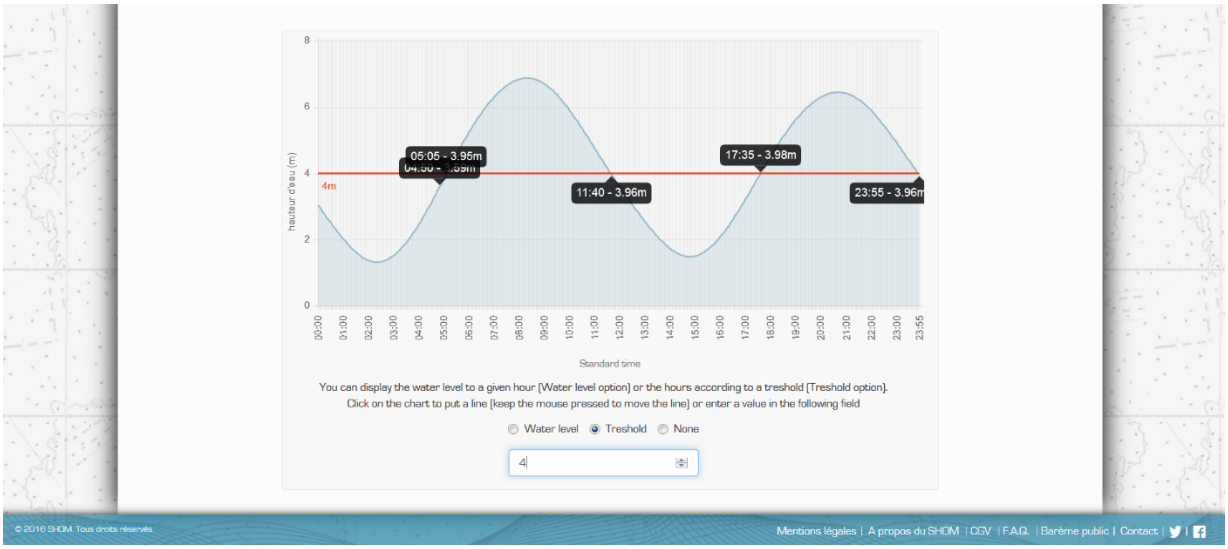
No account is taken of Daylight Saving Time

These predictions are identical to those published in ANTT and can thus be used as an official navigational publication.
Prediction Datum is LAT, which may not be Chart Datum. Correction to Chart Datum can be found at:
Level / To Chart Datum Corrections and Zero of Predictions Window.

Example from SHOM (France)




Distribution area | Harbor selection | Generate harbor widget | More details | EN | FR |
SHOM L'océan en référence
Tides tables
Select harbor
Search harbor
Show the map
Brest (France)
Coordinates : 048° 23' 00.0" N, 004° 30' 00.0" W
Tides tables
Water level by hour
Tides coefficient
05/02/2018
S_Time
Monday February 5, 2018
Tuesday February 6, 2018
Wednesday February 7, 2018
Thursday February 8, 2018
Hour Height Coefficient
LW 02:20 1.31 –
HW 08:18 6.88 85
LW 14:46 1.49 –
HW 20:41 6.45 78
LW 03:03 1.74 –
HW 08:59 6.40 71
LW 15:30 1.98 –
HW 21:24 6.02 63
LW 03:49 2.20 –
HW 09:45 5.91 56
LW 16:19 2.45 –
HW 22:16 5.62 49
LW 04:42 2.62 –
HW 10:41 5.48 43
LW 17:17 2.81 –
HW 23:21 5.34 39
8


8
6
4
2
0
hauteur d'eau (m)
4m
05:05 - 3.95m
11:40 - 3.96m
17:35 - 3.98m
23:55 - 3.96m
00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 23:55
Standard time
You can display the water level to a given hour (Water level option) or the hours according to a treshold (Treshold option).
Click on the chart to put a line (keep the mouse pressed to move the line) or enter a value in the following field
Water level
Treshold
None
4
© 2016 SHOM. Tous droits réservés
Mentions légales | A propos du SHOM | CGV | F.A.Q. | Barème public | Contact

Annexe B à la LC de l'OHI 31/2019

Dossiers de l'OHI n° S3/8151 & S3/6004

Proposition de nouvelle résolution de l'OHI 01/2019

Bulletin de vote
*(à retourner au Secrétariat de l'OHI **au plus tard le 31 août 2019**)*
Courriel : cl-lc@iho.int *– Télécopie : +377 93 10 81 40*

Note : Les cases s'agrandissent au fur et à mesure de la saisie des réponses.

Etat membre :	
Correspondant :	
Courriel :	

Approuvez-vous la proposition de nouvelle résolution de l'OHI 01/2019 ?

OUI ☐ NON ☐

Si votre réponse est « NON », veuillez en expliquer les raisons dans la section commentaires ci-dessous.

Commentaires :	

Signature :	
Date :	