

# Windfarm AtoN



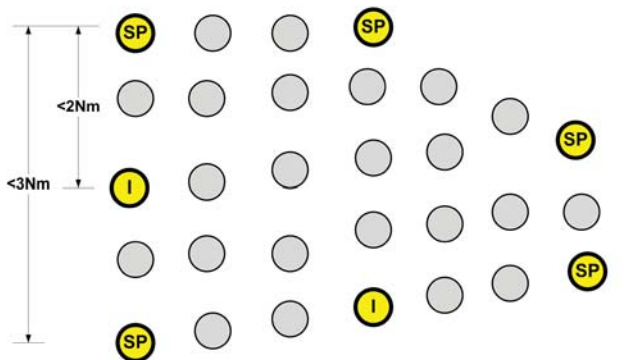
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Tideland Signal Corporation has developed several options of AtoN specifically designed for offshore windfarms which comply with the IALA Recommendation O-139, edition 1, December 2008. These recommendations outline the requirements for an individual wind turbine or a windfarm comprising numerous turbines.

For an individual turbine it is recommended to fit a 5Nm white light, flashing Morse Code "U", mounted at a minimum height of 15 metres above the Highest Astronomical Tide (HAT) but below the turbine blades. As it should be seen from all directions, two are recommended. The tower should also be painted yellow all around to a height of 15 metres above the HAT or to the height of the AtoN.

For marking groups of structures (windfarms), the recommendation calls for a 5Nm yellow light on each Significant Peripheral Structure (SPS) which should be seen in all directions. This requires two or three lights and it is recommended that they are synchronised. It is further recommended that all SPS lights are synchronised.

In the case of large windfarms the SPSs should not normally be more than 3Nm apart. Selected Intermediate "I" structures on the periphery of a windfarm, other than the SPSs, should be marked with flashing yellow lights, with a range of not less than 2Nm. The flash character should be distinctly different from those of the SPSs. The lateral distance between an SPS and intermediate structure should not be greater than 2Nm.



Suggested markings for windfarms, in line with IALA Recommendation O-139.



In addition to these minimum requirements, IALA recommend that consideration should be given to the following:

- Lighting all peripheral structures
- Lighting all structures
- Racon
- AIS AtoN
- 2Nm fog signal

The above provides a guide to the IALA requirements and all proposed systems should be discussed with the local lighthouse authority or coast guard.

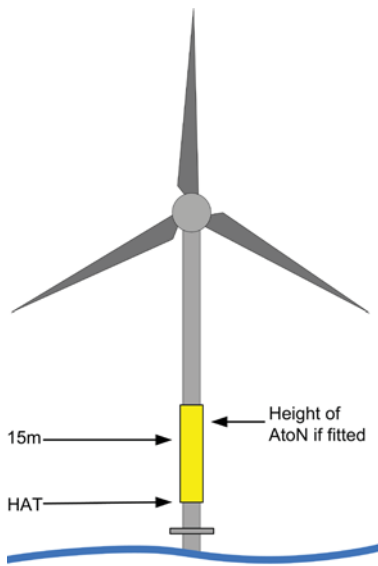
Tideland Signal offers a variety of equipment that is suitable for the marking of offshore structures and windfarms. Equipment includes self-contained lanterns, separate solar powered lanterns, fog signals and racons.

One of the most popular units is SolaMAX-155 as it is a completely self-contained lantern able to provide a white light to a range of 5Nm and can be synchronised via GPS. It is also able to provide the required 2Nm yellow lights for peripheral structures. SolaMAX is a completely self-contained lantern that requires almost no maintenance and can be monitored via several options of remote monitoring.



Other users have opted for a separate lantern, solar and battery system which is assembled onto a common frame (Solachan). A Solachan system takes advantage of an MLED-155 which is fitted with a MaxiHALO-60 flasher unit. This is extremely efficient and in many cases only a 10W solar module and 105Ah battery are required to operate the lantern. Ranges of 5Nm white or 2Nm yellow are available together with a complete range of flash characters and GPS synchronisation.

In addition, the MLED-155 can be powered by mains power if it is available on the structure. Often a battery charger and battery system is used as a back-up to allow for any losses of AC power.



AtoN positioning in line with IALA Recommendation 0-139.

The above systems can be enhanced by the use of an AIS AtoN. This system broadcasts the position and size of the structure to all vessels fitted with AIS and provides another safety measure marking the structure electronically as well as visually, ensuring the security of the structure or windfarm. When used with a Tideland lantern, remote monitoring data is available (refer to the TSD datasheet on our website).

Both of the above options will meet all IALA requirements. In addition, many organisations are taking advantage of modern technology and installing additional aids to navigation including fog signals, racon and AIS AtoN (see above).

**TIDELAND SIGNAL CORPORATION**  
**CORPORATE HEADQUARTERS (Houston, TX)**  
 TEL + 1 713-681-6101  
 FAX + 1 713-681-6233  
 EMAIL [hq@tidelandsignal.com](mailto:hq@tidelandsignal.com)

**TIDELAND SIGNAL CORPORATION (Lafayette, LA)**  
 TEL + 1 337-269-9113  
 FAX + 1 337-269-9052  
 EMAIL [lafayettesales@tidelandsignal.com](mailto:lafayettesales@tidelandsignal.com)

**TIDELAND SIGNAL CANADA LTD**  
**(Vancouver and Ottawa)**  
 TEL + 1 604-247-0988  
 FAX + 1 604-247-0987  
 EMAIL [canada-sales@tidelandsignal.com](mailto:canada-sales@tidelandsignal.com)

**TIDELAND SIGNAL PTE LTD (Singapore)**  
 TEL + 65 6333-0078  
 FAX + 65 6333-0079  
 EMAIL [sales@tidelandsignal.com.sg](mailto:sales@tidelandsignal.com.sg)

**TIDELAND SIGNAL LTD (Burgess Hill, UK)**  
 TEL + 44 (0) 1444 872240  
 FAX + 44 (0) 1444 872241  
 EMAIL [sales@tidelandsignal.ltd.uk](mailto:sales@tidelandsignal.ltd.uk)

**TIDELAND SIGNAL LTD (Dubai, UAE)**  
 TEL + 971 4-886-0180  
 FAX + 971 4-886-0181  
 EMAIL [sales@tidelandsignal.ltd.uk](mailto:sales@tidelandsignal.ltd.uk)

**WEBSITE** [www.tidelandsignal.com](http://www.tidelandsignal.com)



ISO 9001:2008  
 Certificate  
 Number: 30061

**ISO 9001:2008**

Tideland Signal Corporation maintains ISO 9001:2008 accreditation. It is company policy to provide products and services that meet the highest standards of quality in the industry.

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