

Project RM: Wind turbine mitigation Briefing note for developers December 2012

Background

NATS assesses more than 2,000 wind turbine development applications every year and fewer than 5% raise any objection from us. When we object, it is on the grounds of aviation safety and efficiency; this is because turbines can create "clutter" on radar screens, potentially masking the presence of aircraft.

We like to talk to developers at the beginning of the planning process to provide advice on any potential problems and help inform your application. We have a range of tools to help mitigate the effect of wind turbines on our surveillance infrastructure, either by making modifications to the engineering infrastructure or by changing the way we operate. These include:

- Blanking – e.g. GDF only
- Blanking and Infill own estate – e.g. Lowther and Infill from GDF
- Blanking using third party Infill – e.g. Kincardine, Glasgow, Edinburgh.
- Airspace changes – e.g.

However, these tools have both technical and operational limitations and therefore finite application, making our current approach unsustainable for the future. In view of this, we supported two years research programme by Raytheon, funded by the Government and a consortium of developers, to find a new way of tackling the problem.

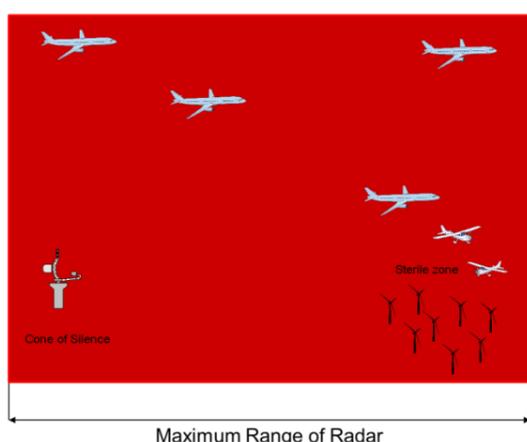
The resulting modification is an extremely valuable additional tool for mitigating the impact of wind turbines on radar, though it will not remove the requirement for individual assessment by NATS of all wind turbine development applications.

Raytheon and NATS have invested considerable resource to find a long term solution to meet the Government's 2020 renewables target; one that is maintainable efficiently and is cost effective. We are now able to offer this additional mitigation through **Project RM**.

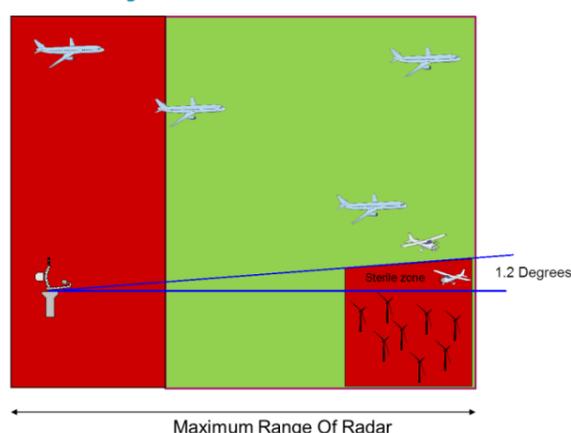
What is Project RM?

Project RM provides an enhancement to the radar system reducing the impact of turbines in certain airspace. This approach is sustainable and scalable.

Before Project RM Modification



After Project RM Modification



Subject to your participation in a more detailed pre-planning assessment, current research indicates that wind turbines in line of sight of **Project RM** equipped radars and proposed for development ...

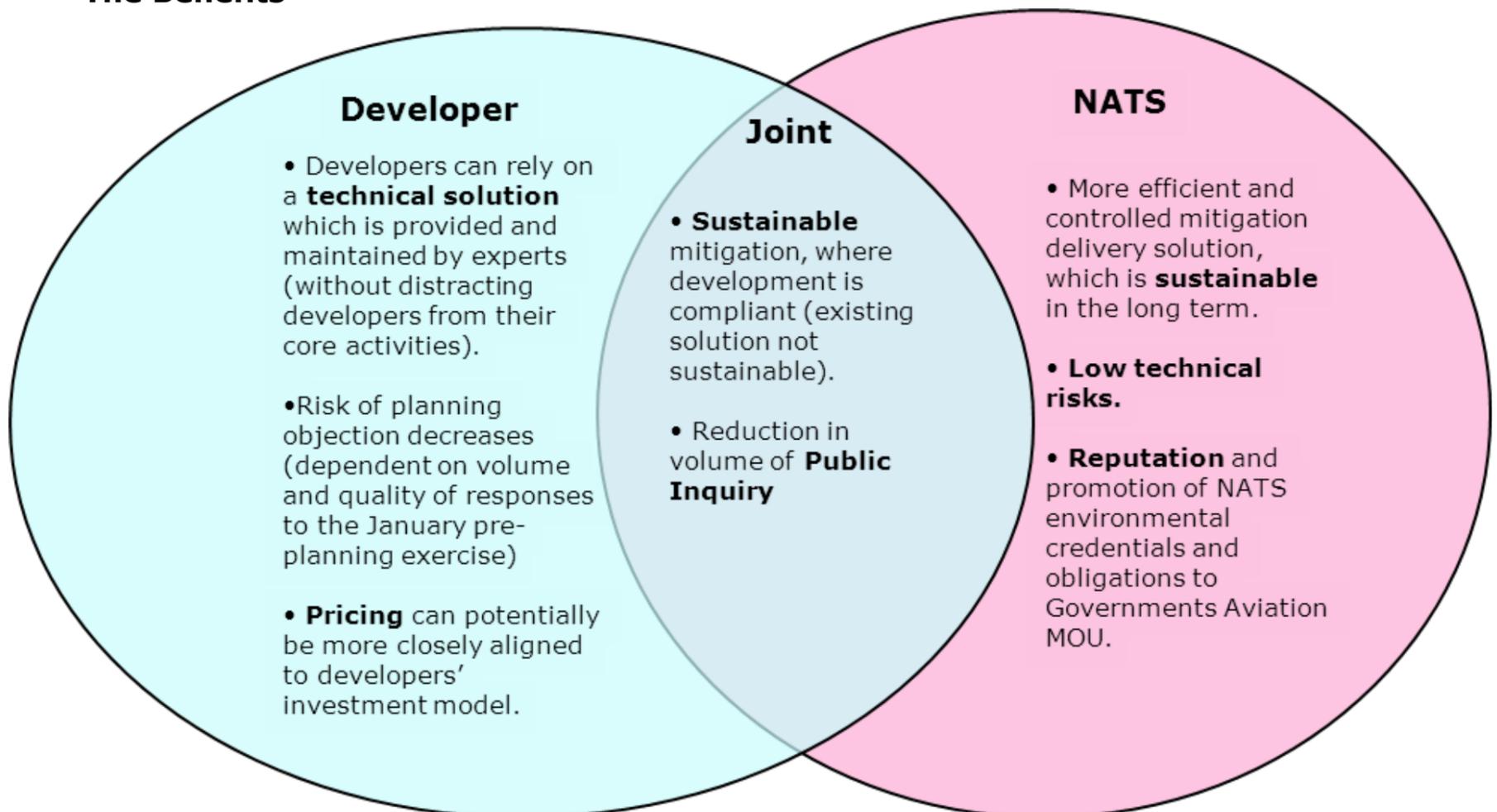
- outside 9 nm from the radar head; and
- where the vertical angle between the base of required cover and the turbine tips is 1.2 degrees or greater measured from horizontal (the "Parameters")

... will be technically mitigated by Project RM and that, subject to no other operational objections, NATS could therefore withdraw its planning objections to wind turbines once the mitigation has been deployed and activated over the development in question.

Project RM "scope of change"

Depending on the output of the pre-planning analysis (which developers can influence), NATS will propose a **Project RM** roll-out programme in order to release maximum megawatts. With sufficient developer investment we have identified five key radars to undergo initial equipage; we expect this to provide mitigation for 90% of projected future wind turbine developments. Existing mitigation solutions (blanking/infill) will be provided for the 10% of projected developments affecting other radars.

The Benefits



Developer Benefits

- 1) Up-front payment to mitigate future risk;
- 2) risk of planning objection decreases (dependent on the volume and quality of the responses to the January pre-planning exercise)

The cost

Project RM presents no technical or operational benefit to NATS in meeting our ATC licence obligations and our regulated business is not funded to invest in it. This is why we cannot accept the cost of deploying the system.

Project RM requires an initial substantial investment; total costs are dependent on final configuration of selected sites, and it is assumed that some additional annual on-going maintenance will also be required to maintain a 'split baseline' (because some radars will be equipped with this technology whilst others will not)

Charging Mechanism

Our initial proposal is that developers pay an upfront, one-off fee. Subject to contract, this entitles the developer to a specific volume of MW mitigation. There may be a triggering fee to implement the solution for each wind turbine development and a small annual maintenance fee.

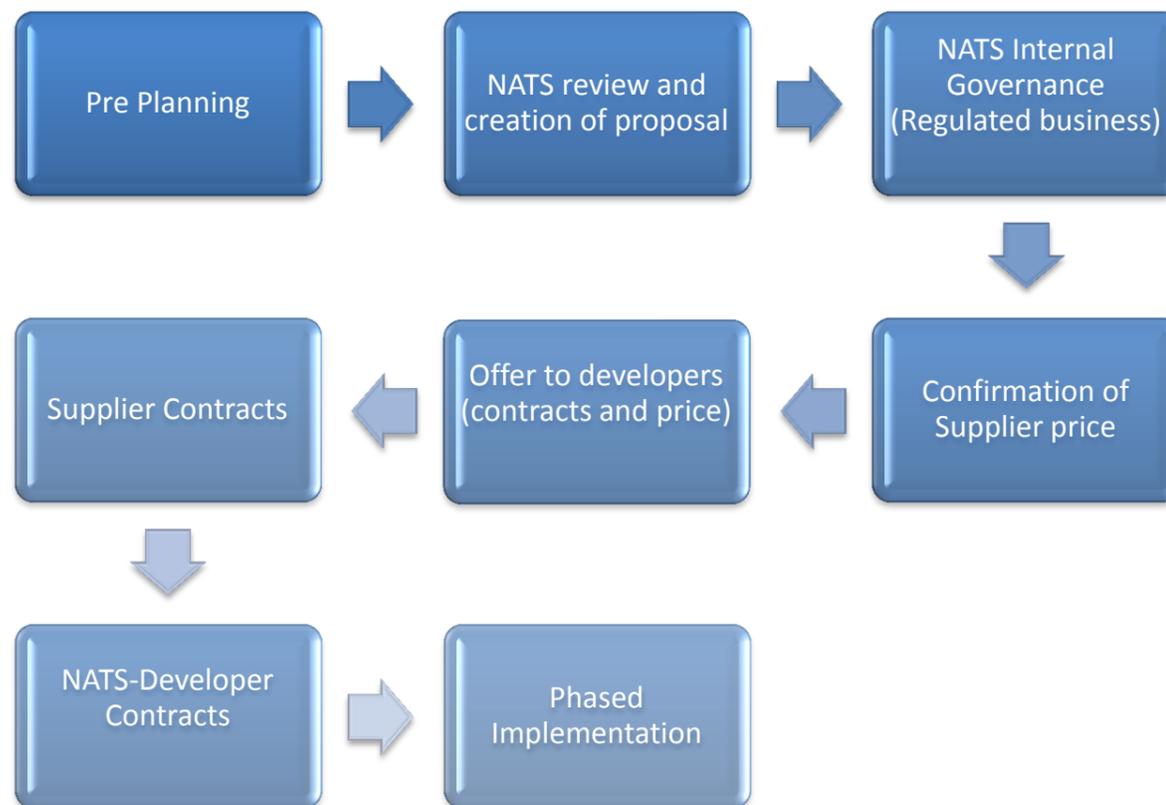
Is there gain/profit share mechanism?

Project RM is provided through NATS' regulated business, whose return on investment is limited. NATS, therefore, aims to provide a gain/profit sharing mechanism for developers that take the pre-payment option.

When does profit sharing start?

This is assumed to be after completion of the initial investment (discounted using a cost of capital which fairly reflects the level of risk that NATS is bearing). Income earned until that point would be fully retained by NATS.

What is the process?



If the developer community is to benefit from Project RM we need your assistance.

To help you determine at an early stage which of your proposed wind farms could benefit from Project RM, please visit <http://www.nats.co.uk/services/information/wind-farms/>. Based on the information you provide NATS will assess your proposed development for Project RM benefit until 31st January **free of charge**.

NATS will use the information to set pricing, define contract requirements and set the priority for implementation of Project RM across the NATS' estate.

It is in your interest to provide the fullest information possible during the free Project RM pre-planning window.

Next steps

If the developer community is to benefit from **Project RM** we need your assistance. To help you determine at an early stage which of your wind farms **Project RM** modification will work for you, please visit <http://www.nats.co.uk/services/information/wind-farms/> and NATS will assess your development for Project RM benefit until 31st January 2013 free of charge.

For more information on how NATS can help, contact:

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