

**IN THE MATTER** of the Radiocommunications  
Act 1989

**AND**

**IN THE MATTER** of Proposed Changes to Radio  
Licences: Security of Tenure

## **Executive Summary**

In this submission, Airways seeks to influence the regulatory review of radio licensing *Security of Tenure* in favour of;

1. Fixed *no change* period for licenses, including operating parameters, in the order of 15 years
2. Continued low-barrier access to spectrum as per the current licensing regime
3. Continued protection of licences against interference by RSM

## **Preamble**

Airways currently maintains some 486 radio licences in order to operate a broad range of aeronautical communications, radionavigation, radiolocation, surveillance and associated linking and monitoring. Of principal concern to Airways is achieving a very high level of system reliability based on assured access to appropriate spectrum, given these systems directly support flight safety, flight regularity and safety of life. System availability is also of direct concern to Airways' customers, who expect a grade of service approaching 100%. Airways is also subject to the provisions of CAA law and ICAO regulations.

Some Airways systems rely not only on spectrum set aside by the ITU exclusively for aeronautical radiocommunication use, but also licensed frequencies in commercial spectrum used by supporting and back-haul equipment. For example, six of Airways' radar sites rely on digital microwave links and the recently installed Category 3 (CATIII) ILS at Auckland Airport relies on 450MHz links for system supervision and dynamic performance analysis which must be conducted on a continual basis to comply with international certification requirements. Systems such as radar and ILS are significant capital investments for Airways, and indeed impact on a broad range of aviation activities. Airways contends that consideration must be given to not only the spectrum that those systems directly rely on, but also the spectrum required for operating supporting equipment such as data links that are integral components of Airways' systems. It is important to stress that linking equipment is critical to maintaining the integrity of service operation.

Airways understands and accepts the one of the fundamental tenets of the radio regulations is efficient use of radio spectrum by employment of spectrally efficient technology, this however should be weighed against economic and operational risks that may be encountered when a major equipment swapout is prompted. In particular, the implementation of new emerging technologies on the grounds of spectral efficiency alone can have a detrimental impact on the robustness of safety related systems to withstand interference. Also it must be noted that because many of the services operated by Airways are subject to international regulations and operating standards mandated through ICAO, it is imperative that equipment used by Airways is designed and capable of operating to these standards.

Ideally and noting that licences are technology related, Airways would see security of tenure extend to licences in the order of 15-20 years such that the licences would be related to the equipment lifecycle in a given configuration for a fixed duration. . Also changes of the conditions attached to a licence that are invoked during the period of the licence and which require parameter adjustment such as a reduction of EIRP can be as detrimental to system operation as a change of frequency. Therefore, the conditions associated with a licence should also be considered as an issue of tenure security.

Airways is of the view that a distinction for licences related to safety services is both justified and necessary. The international relationships of the bands in which these services operate need to be recognized and the bands set aside with a guaranteed license period. This would ensure much greater security of tenure being offered given the low likelihood that this spectrum will be re-farmed in the future. Furthermore, the licences required for linking equipment which form necessary components of Airways' systems also need to be taken into

account. Licences for these systems could have an expiry date, as even this approach would give users, such as Airways, improved confidence in operational longevity.

### **Future Regulator issues**

Future spectrum sharing technologies should also be considered as a security of tenure issue. Emerging technologies such as software defined radios, cognitive radios, ultra-wide band devices and interference tolerant systems will no doubt seek to use under utilised spectrum such as that set aside for aeronautical applications. Airways would seek to have discretion over spectrum sharing in these instances, especially the setting of protection criteria as we would consider that additional use of this type would potentially constitute both a risk to the integrity of safety of life services and an economic risk. The recent introduction of an interference avoiding data communications system into the frequency band utilised by DME radionavigation systems is a case in point where a new technology is bringing about significant change to the operating environment for existing aeronautical services.

## Response to Questions

### **Q1. Should radio licences have greater security of tenure? Why?**

Yes. Uncertainty of licence tenure constitutes a significant economic risk and can have a detrimental impact on the viability of an investment business case, which in turn may impact on Airways ability to improve the operational integrity of services. In the extreme case, a loss of integrity in the services Airways provide due to licence and spectrum use related issues could result in aircraft unable to operate efficiently causing economic harm not only to aircraft operators but also the nation at large.

### **Q2. What is more important to your business: rapid access to radio spectrum to implement new services, or security of tenure for investment?**

Security of tenure is more important. Airways seeks a high level of confidence in the ability to operate and maintain equipment over a 10-15 year lifecycle. Furthermore, the speed at which changes to technologies and operating conditions can be introduced for aeronautical services operating in internationally recognized frequency bands is impacted by international agreements and the setting of ICAO operating standards. This adds additional emphasis to the benefits to be gained from long term security of tenure.

As previously explained, linking equipment relying on licences in general point-to-point fixed service frequency bands are often integral components of the systems operated by Airways. Security of licence tenure is also very important in regard to operation of this equipment in terms of overall service integrity from safety of life and regularity of flight considerations.

Airways also notes that uncertainty over the future of the licence regime can have an adverse impact on investment decisions related to enhancing safety services.

**Q3. Could changes to security of tenure be made in isolation from other reforms of radio licences? Might there be unintended consequences?**

While it may seem to be preferable to develop a complete approach to the reform of the licence regime, Airways is of the view that not all licence categories need to be treated in the same manner. Recognizing the special character of safety related services means that licences for these services can and should be considered separately from licences for purely commercial services.

It is also to be noted that unintended consequences equally may occur if all possible licence reforms are taken into account. As safety services have a specialist flavour with unique requirements, they stand to suffer potentially in any alignment of policies that may result from an overall generalized approach to licence reform rather than adopting an approach which addresses the particular needs of special services. In considering a generalized approach to licence reform, it is definitely not a case of one size fits all. Airways view is that the needs and circumstances of specialized services require separate consideration.

**Q4. Should all (or most) radio spectrum be moved to the management rights regime? Why?**

No, especially spectrum used for safety and flight regularity applications should not be considered for transfer to a management rights regime. Airways is of the view that nothing would be gained by transferring the bands used by the aviation community, including the internationally recognized bands, into a management rights regime and in fact much would be lost. The continuation of low-barrier access to spectrum as provided by the current licensing regime is strongly preferred. Continued licence protection from interference by RSM is also very important particularly for safety related services. This facility is likely to be lost if a management rights regime were to be introduced. Airways is concerned that while under the licence regime, interference issues can be addressed and resolved quickly this may not be the case under a management rights regime where a third party rights holder has no experience nor any expertise related to safety services.

**Q5. Would a defined methodology for determining when spectrum is to be reallocated improve the security of tenure for radio licences? How and why?**

While it would be dependent on the methodology chosen by the MED, Airways believes that the best way to improve security of tenure would be to incorporate a specified tenure period in the licence. Continued enjoyment of the licence should of course be subject to the user satisfying operating conditions that may be attached to the licence.

A defined methodology, provided it met the needs of users would improve confidence levels. The ability to judge when and how spectrum will be reassigned in the future should allow for more sustainable technology decisions and business operational decisions.

**Q6. What steps and considerations would a defined methodology incorporate?**

Factors that need to be taken into account in the development of a defined methodology include the following:

- Inclusion of a commitment to a full consultative process in the development of changes to spectrum allocations.
- Inclusion of specific allowances or exemptions for specialist services such as safety services.
- The length of the specified tenure periods appropriate to specific services taking into account externally stipulated international agreements and operating standards, for example by ICAO.
- The licence conditions which must be observed by the user to ensure the licence remains in place and the specific grounds under which the licence may be revoked.
- The specific circumstances which must exist before spectrum will be considered for re-allocation. Specificity in this regard is very important and pronouncements of generalized concepts should be avoided.
- The rules of procedure that will be applied when spectrum is to be reallocated including sharing considerations, protection criteria requirements, transitional considerations and alternative spectrum availability.

- Details of the process that will be applied for the renewal of licence tenure once the initial period of tenure approaches its expiry date.
- An outline of a process for the review of decisions and proposed implementations of changes to spectrum allocations.

**Q7. Should radio licences be allocated with more certainty over their term?**

**How and why?**

Yes. The term should reflect the anticipated lifecycle of equipment. This includes not only the equipment operated by Airways but also equipment installed in aircraft where it must be remembered that due to certification requirements the life-cycle of approved equipment types often exceeds 20 years.

Even for linking equipment, Airways considers that it is highly undesirable to have serviceable equipment forced out of operation due to spectrum reassignment or change of licence parameters. It might be desirable that a whole band had security of tenure, as even in that case planning for equipment lifecycle could be undertaken with a higher level of confidence.

**Q8. If security of tenure should be provided, should different services be treated differently? What criteria might be considered in determining a suitable period for security of tenure?**

Airways view is that safety services justify different treatment when it comes to security of licence tenure. Investment decisions on the provision of safety services including communication links as integral components cannot be made on the basis of commercial factors alone. The integrity of safety services are paramount in investment decisions and this translates into quality of service for users, availability, reliability and freedom from interference. For these services any loss of service in fact any disruption of service is unacceptable.

As stated above, Airways would like to see the tenure period of a licence being linked to the equipment life-cycle and that there will be full consultation over the renewal of licence tenure at the appropriate time..

**Q9. In what circumstances would immediate revocation be appropriate?**

While a licensee should be given the opportunity and importantly adequate time to resolve issues the time allowed should depend upon the seriousness of the issue and the degree to which it impacts on the enjoyment of spectrum access by other users.

Grounds for the immediate revoking of a licence definitely should include serious and sustained breaching of the conditions of the licence resulting in on-going harm to other users.

As an example of concern to Airways, any instances of interference to radionavigation systems such as ILS and DME systems must be treated very seriously and resolved rapidly. Any interference that causes inaccurate ILS readings for aircraft approaching a runway is unacceptable. The concept of acceptable interference is foreign to the operation and integrity of safety services. In general the result of interference to such services is that the safety services cannot be used.

**Q10. Would a change to the licence or regulation be effective to give security of tenure? Is either option preferable?**

Airways considers either approach can be made to be effective but would prefer the licence approach as the tenure can be made specific to the service involved and the circumstances of the particular application.

In addition, any conditions on the licence should be made clear at the time when the licence is issued. Retrospectively applied conditions should be avoided and if deemed necessary should be subject to full consultation and appropriate compensation for the licensee.

**Q11. Which of the options of a set term or minimum notice for revocation is preferable? Why?**

Set term would be preferable as this would assist with long term planning for service provisioning and equipment life-cycling. As noted above, the set term also should be coupled to an even-handed process for tenure renewal as each licence approached expiry.

**Q12. Should holders of radio licences have defined transitional rights in the event of conversion to the management rights regime? Why?**

Yes. The arbitrary rescinding of licences could have a disastrous impact on Airways core service activities and obviously on the integrity of Airways' services. A defined transition path is essential to maintaining business confidence levels while providing users of Airways' services the necessary assurances of long term access and availability.

**Q13. Should such rights be to a guaranteed replacement spectrum licence for a set period, or to be provided a suitable transition path? Are there other options?**

For the reasons given above, Airways does not support converting its current licences under the licence regime to a management rights regime. In particular, it is difficult to understand how the aeronautical services operated by Airways could be transitioned to other spectrum bands given the international aviation standards that apply to these services and the bands in which they operate.

Airways does accept that the point-to-point and point-to-multipoint linking equipment operating under fixed service licences could be transferred to alternative spectrum bands, albeit at a cost. With this cost in mind and noting the impact on service integrity, Airways view is that any forced transfer should either be at the cost of the incoming rights holder or that there should be a grace period of at least 5 years for the transfer to a new band to be completed.

**Q14. Which option out of changes to licence conditions or regulations, a statement of government policy or legislative change is preferable to provide security of tenure on conversion of spectrum to the management rights regime? Why?**

Airways prefers changes to the licence conditions since this approach is flexible yet can be made specific to the circumstances of each individual licence. The approach of relying on a statement of Government policy is not recommended as policies can be changed too easily and without consultation with the affected parties. The legislative approach may provide a uniform

approach across all licences but is less flexible and cannot readily be made specific to align with individual needs or circumstances.

**Q15. Should financial incentives be payable for changes to radio licences imposed on licensees? Why?**

Yes. Licensees make investment decisions on the basis of known information on the one hand and also on reasonable expectations of continued enjoyment of spectrum access on the other. If these expectations of access are curtailed by the actions of 3rd parties than it would be fair and reasonable that either financial incentives or payment of band transfer costs are paid to the licensees. An alternative to offering a financial incentive would be to grant a grace period for any transfer of services to another band to be completed and which takes into account the equipment life-cycle remaining.

**Q16. How would you see such funds being supplied and allocated?**

If the change in the conditions is at the behest of the Ministry, then the Ministry should provide the funds. For example, if the Ministry takes a decision to convert spectrum under a licence regime to a management rights regime and proceeds to an auction of the management rights, then a part of the financial return from the auction should be used to compensate licensees affected by the change.

**Q17. Are there any other issues in the context of this discussion paper that you wish to bring to the attention of the Ministry?**

Other issues that Airways would draw to the attention of the Ministry are:

- The potential impact of emerging spectrum sharing technologies, and the requirement to protect existing services. Airways would seek to have appropriate regulatory protection should spectrum sharing be introduced in licensed bands.
- The impact of introducing management right regimes in bands adjacent to bands used for aeronautical services.

- The responsibilities of management right holders in tracking and clearing interference issues affecting other users and methods to ensure these responsibilities are properly discharged.