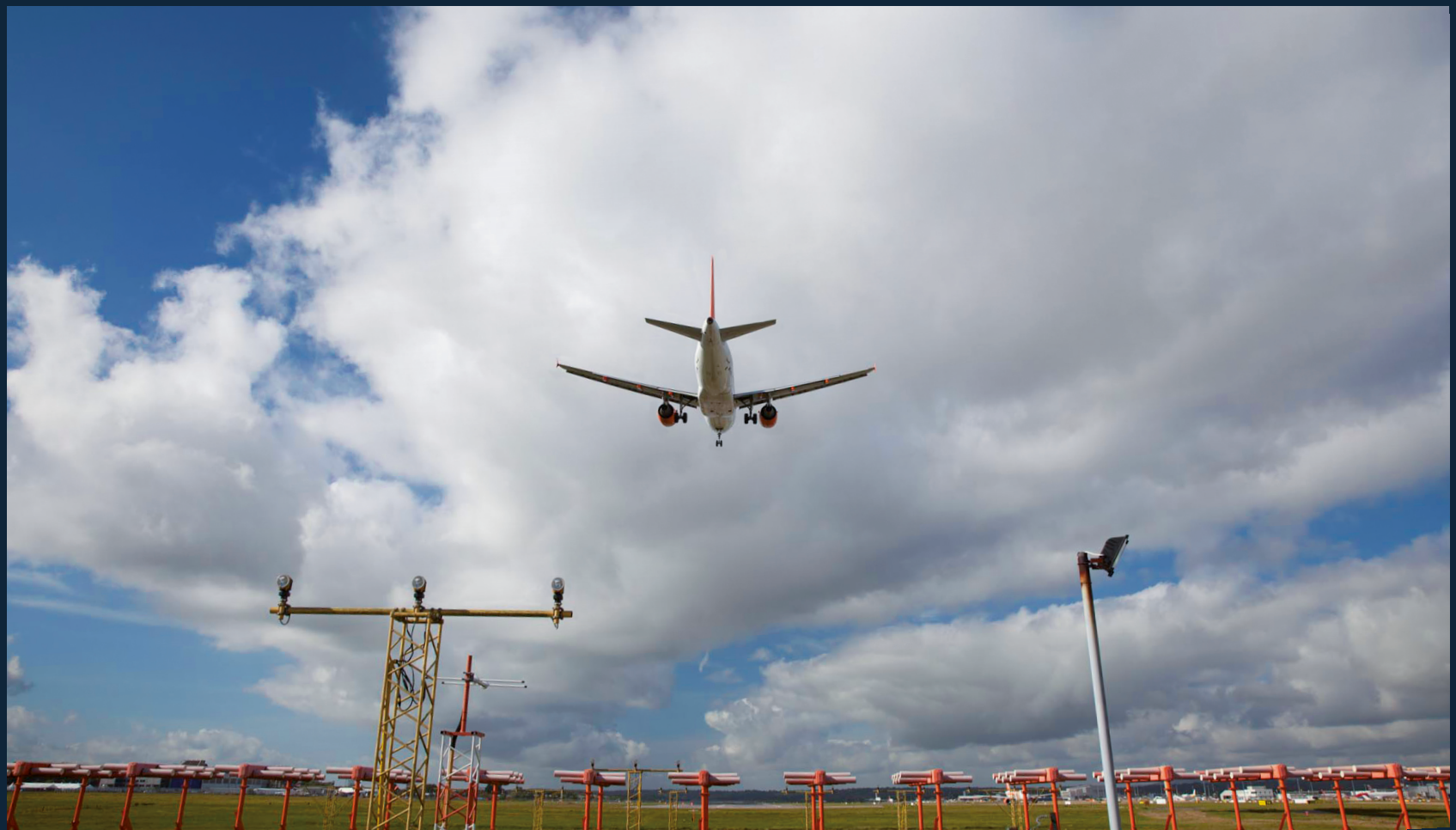
Gatwick Airport Independent Arrivals Review

Executive Summary



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The Independent Review of Arrivals has stemmed from Gatwick's assessment that more could be done to meet the concerns of local communities about noise from aircraft arriving at the airport. That assessment has been borne out by the findings of this Review, it is clear that there is scope for the improvement of the present situation through the greater utilisation of a number of established techniques, and through a closer collaboration on noise planning, noise mitigation and noise communication issues between the stakeholders.

The review work has included an analysis of documentation and correspondence, the development of a comprehensive understanding of the principal perspectives identified and expressed and the identification of and engagement with key stakeholders, including residents.

In relation to noise planning, management and coordination matters, the complex structure of air transport policy, regulation, operation and oversight creates a naturally fragmented environment within which misunderstandings and even organisational conflict can develop. This situation can be exacerbated when the institutions and residents involved find themselves in an adversarial position, which on the basis of the findings of the review, appears to have been the case on occasion for Gatwick arrivals.

It is important to recognise that people's reaction to and perception of arrivals aircraft noise is a complex matter for any airport. Gatwick is no different. The routes and heights flown by aircraft have a direct impact on the effects of aircraft noise. They are also the result of airspace design and its operational management. For a physically small country with a large demand for aviation activity, the UK airspace infrastructure is a scarce resource. Since England has one of the highest population densities in the EU, it is therefore inevitable that aircraft noise will be a particular issue here compared with other countries.

Civil Aviation operates within a highly structured regime throughout the world. In the UK as elsewhere, this comprises, Government Policies and Strategies, Regulations and the Governance of airports, aircraft operations and airspace management. To ensure a consistent, safe and harmonised implementation, changes proposed for the UK air transport system at a national level are required to respect and reflect the policies and guidance developed and agreed by states (including the UK) at the global level through the International Civil Aviation Organisation (ICAO). Increasingly, European Regulation through the EC and the European Aviation Safety Agency (EASA) is adding to that complexity.

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Gatwick is located in South East England, one of the busiest locations for air transport in the world, an area served by airports which combined generate more than 1 million flights, processing in excess 150 million passengers. About half of these flights are operated at Heathrow, a quarter at Gatwick and the remainder by the other four London airports. Together these flights create one of the world's most complex areas of terminal airspace. The airspace used by aircraft arriving at all London airports including Gatwick, is managed by the UK National Air Traffic Services (NATS) from the UK National en-route Air Traffic Control Centre, located at Swanwick, Hampshire.

The routings established for Gatwick Arrivals and Departures reflect good practice as defined by the CAA and reflect the greater demand for airspace for the busier airport at Heathrow which also, because of its location, constrains the airspace options available to Gatwick.

Community Feedback

The review team, in the course of undertaking the arrivals task, has engaged with an extensive range of organisations, individuals, Parish, Town, District and County Councils, and Members of Parliament at Westminster, and has conducted three interactive public meetings with local Members of Parliament which were each attended by several hundred individuals. A large volume of e-mailed opinion has also been received.

The analysis of this feedback has led to the conclusion that community sensitivity to, perception of, and reaction to, the noise from aircraft using Gatwick, has increased. This is apparently for several reasons, which, in no particular order, include:

- The public consultation of Airspace Change Proposals in 2013 (subsequently withdrawn) for Gatwick, related to the CAA UK Future Airspace Strategy and NATS London Airspace Management Programme, their associated proposed P-RNAV arrival and departure routes, and the concentration of arrivals implied by the proposal of a Point Merge procedure.
- The 2013 Approach Stabilisation Initiative by GAL and NATS, changing the radar vectoring methodology used by NATS air traffic controllers at Swanwick, who manage Gatwick arrival manoeuvring and sequencing, which created an arrival swathe concentration of aircraft, both further east and further west of the airport.
- The work of the Airports Commission and the associated campaign by GAL to win approval for a second runway at Gatwick.

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- Airframe noise, generated by the Airbus A320 family of aircraft. The use of these aircraft at Gatwick is progressively increasing; by 2014 they represented more than 60% of all aircraft movements at the airport.
- The 2014 ADNID trial of potential new departure routes west of the airport.
- The introduction of RNAV-1 departure routes and the subsequent Post Implementation Review by the CAA.
- The perceived inability of communities to influence noise factors through the normal community engagement process provided by the airport, including the Gatwick noise complaints procedure (which is also reported by some residents to be inadequate) and the Gatwick Airport Consultative Committee (GATCOM).
- Insufficiently coordinated and sometimes inconsistent communications regarding arrivals procedures and noise mitigation from GAL, CAA, NATS and the DfT.
- The ubiquitous use of social media and of flight following Apps that has enabled the rapid dissemination of information and sometimes misinformation, which the institutions involved have often had neither the resource, coordination mechanisms, nor experience to manage effectively.

A Balanced Approach

For the management of aircraft noise, ICAO has adopted a balance approach. This uses a mixture of improvements in airframe and engine technology, and a range of operational measures. Land use planning policies, also a part of the balanced approach adopted by Governments, have been designed to reduce the numbers of people affected. This balanced approach is also used by the EU and UK Government for policy making and, has informed the structure of this review and its report.

Noise mitigation options reviewed and recommended by the review team are based on a wide range of policy, best practice and technical material. Aviation safety is of paramount and overriding concern in the consideration of any options by the review team who have taken the view that safety should be maintained and whenever possible should be enhanced by the recommendations made in the report.

Reducing aircraft noise at source has delivered the most significant noise reduction benefits, through enhancements in airframe and engine design and manufacture. By creating quieter aircraft in this way, the significant benefits in aviation noise reduction have been driven since the 1950s. These important measures, always a focus of aircraft manufacturers and noise certification authorities, have enabled the progressive and continuing reduction of noise at source.

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Airbus 320 Series Whine

Of particular relevance to Gatwick arrivals is the known noise issue (a whine) associated with the Airbus A320 family of single aisle narrow bodied aircraft, for which an approved noise modification is available. This family of aircraft is the most frequently used aircraft type at Gatwick.

Based on responses from easyJet and British Airways, the two largest operators of A320 series at Gatwick, the review has concluded that it is reasonable to expect by June 2016 a significant decrease in the occurrence of Airbus 320 family aircraft arrival whine events at Gatwick, with the majority of flights operated by modified or new (unaffected) aircraft by the end of 2017. Even so, more action is needed; the review accordingly makes the following recommendations:

- That as an indication of GAL commitment to noise reduction, as a further tangible indication to local communities that the noise impact of the airport is taken seriously and to incentivise an accelerated noise modification by all airlines using A320 family aircraft at Gatwick, GAL should establish an earlier sunset date for unmodified Airbus 320 family aircraft using the airport of December 31st 2017. With an appropriate noise penalty applied for non-compliant aircraft immediately thereafter.
- That GAL to engage with DfT, consider proposing to the European Commission the establishment of a sunset date of December 31st 2020 for the operation in Europe of Airbus 320 series aircraft without the Fuel Over Pressure Protector (FOPP) cavity vortex generator noise modification.

Land Use Planning

It is important to ensure that inappropriate new building development is discouraged or prohibited around airports. A holistic approach to planning and land management would see attempts to limit aviation noise at source and adapted operational procedures combined with a strategy to over time reduce the number of people living in areas where noise mitigation will always be challenging. If this were implemented by Government and strictly controlled, first through the National Planning Framework, and then adopted by local authorities, there is the potential over time to significantly reduce the population affected by annoying levels of noise at many airports.

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However, in the course of consultation with institutions and local authorities for this Gatwick Arrivals Review, it has become equally clear that other unrelated obligations from Government, for example to increase housing stock or to identify land for a new school or hospital, mean that effective use of Land Use Planning tools in this context is extremely difficult to achieve. This report therefore includes the following recommendations intended to improve the effectiveness of such policies:

- That planning authorities for communities impacted by aircraft noise from Gatwick, coordinate to conduct their own joint review of the application of land use policy in context of Gatwick aircraft noise, with the objective of identifying steps that will enable the increase of its effective use and the improvement of the aircraft noise awareness for existing and potential land users.
- That Gatwick develop, publish and maintain with annual updates an information booklet intended for planning authorities, home buyers, estate agents and conveyancing solicitors, to provide reference information on flight routes, terminology and other aspects of the airport operation relevant to communities. NATS and the CAA should also be encouraged to participate, and to verify those elements of the content that reflect their own areas of activity.

Operational Measures

Noise abatement operational procedures embrace a wide range of steps which can be taken by the CAA, airspace planners, pilots and air traffic controllers to minimise the noise nuisance from overflights, for example the use where feasible of continuous descent approach procedures with aircraft using low power and low drag configurations. The potential for increased (or improved) use of a number of noise abatement techniques for Gatwick has been analysed and recommendations identified where real potential for improvements was seen.

Many residents reported to the review that they have asked both GAL and NATS to reverse the change of vectoring methodology, which led to a chain of events that ultimately resulted in an application for a Judicial Review. These requests for a restoration of the pre-2013 situation were also widely made to the review team. The arrivals review has carefully considered the factors driving the original change and the options now available. This has confirmed that increasing the size of the arrival swathe, by locating closer to the airport the minimum distance from touch down for an arriving aircraft to be established on final approach, can be expected to deliver significant overall noise improvements for those currently most effected on the ground and should enable a fairer and more equitable dispersal.

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Accordingly a recommendation has been developed:

- That GAL explore with NATS the potential for aircraft be vectored to be established on the ILS at a minimum of 8nm from touchdown outside of night hours, rather than the current 10nm. This adaptation to vectoring methodology should extend the arrival swathe 2nm closer to the airport and increase the arrivals dispersal to more closely emulate the operations prior to the 2013 change. Hence the arrival swathe would normally extend from a minimum of 8nm to 14nm, with aircraft joining on a straight in approach when traffic permits.

Holding Stacks and Defined Arrival Routes

There are currently no defined fixed routes or heights for aircraft to follow from the arrival stacks to the final approach at Gatwick in normal operations, but well defined routes are planned in the UK Future Airspace Strategy to make use of modern navigation technologies and techniques. This will enable the creation of consistent mechanisms for fair and equitable dispersal of noise with defined respite procedures. The timing of such new arrival routes for Gatwick is subject to the airspace design and a formal consultation process. However, even though there are clear opportunities to disturb fewer people, any implementation is likely to be after 2022. Examples of potential new routes are illustrated as an Annex of the report. Meanwhile the review recommends:

- The adoption of carefully designed routes from the approach holding fixes used for Gatwick, to the ILS final approach tracks, provides real opportunity to reduce noise, to disturb fewer people, to deliver fair and equitable dispersal of noise, and, to deliver well defined respite measures. The London Airspace Management Programme should be developed by NATS and GAL to incorporate alternative proposals, to those published in 2013, as soon as reasonably possible, for consultation, agreement and implementation for Gatwick arrivals.

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Continuous Descent Arrivals (CDA)

The CDA concept is widely discussed in noise policy and in best practice guides. CDA is intended to keep aircraft higher for as long as possible, and is acknowledged as a leading technique for reducing arrivals noise. All aircraft arriving at Gatwick are already required by the CAA and GAL whenever practicable to follow CDA or *'low power, low drag'* procedures to reduce noise.

The actual achievement of CDA is measured and reported by Gatwick and is a key performance indicator for NATS at Gatwick and number of UK airports. This is an important measure and should be used as a metric to assess progress to more ambitious CDA goals.

An increase of the altitude from which the CDA are commenced, by aircraft arriving at Gatwick at all times, must be a priority. Equally for noise reasons, holding should be higher, or the position of the Gatwick Arrivals Fixes (the site of the Gatwick airborne holding areas) should be relocated over the sea, eliminating airborne holding dwell time over Sussex, while permitting a longer continuous descent arrival tracks.

Residents have reported a focus on aircraft height, suggesting to the review team that arriving aircraft today are lower than they used to be. Investigation has revealed no firm basis for this perception, which is a common phenomenon reported elsewhere, including Heathrow and a number of airports overseas. It is more likely a consequence of the progressive increase in size of aircraft of similar types, independent research is needed to fully understand the reasons and to properly inform all stakeholders.

A number of additional measures have been identified to improve the noise impact of CDA and are reflected in the recommendations:

- That as soon as possible, the altitude for commencement of CDA at Gatwick should be increased from the current 6000 feet to 7000 feet (FL070).
- That GAL collaborates with NATS, CAA and airlines within 12 months to agree incremental improvements, to the application of CDA procedures for Gatwick.
- That GAL work with NATS and CAA to raise the Gatwick CDA commencement altitude to 8000 feet when feasible.
- That the Gatwick holding areas should be higher, or should be relocated to enable holding aircraft to dwell over water, rather than over Sussex.

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- That GAL propose a subsidiary CDA taxonomy which includes the commencement altitude of the procedure, e.g. CDA 6000, be established by the CAA to improve lay understanding and to better benchmark later improvements.
- To better inform stakeholders, independent academic research should be undertaken to validate the reasons why arriving aircraft are often perceived by residents to be lower than in the past and to identify measures to establish the actual facts in a controlled analysis with community involvement.

Landing Direction

At Gatwick, as in the rest of the UK, the prevailing wind is westerly and therefore the long term average allocation of runway in use is reported as 70:30 in favour of westerly operations (landing towards the west). It is not unusual to experience periods of prolonged operation in either one direction or another, providing little respite to residents.

A characteristic of surface wind, subject to the wider meteorological situation, is that it tends to erode or disappear in the late evening. There will be occasions, normally, but not exclusively at night, when low wind conditions would permit a change of landing direction, thereby potentially delivering respite for residents experiencing both arriving and departure noise. The review has recommended:

- The development, publication and implementation by GAL of an operating protocol to define the occasions when a change of landing direction will be implemented at Gatwick for noise reasons, if weather, safety requirements and other conditions permit. The objective of the protocol being to achieve a more even split of arrivals, and to fragment the otherwise continuous use of one runway direction or another because of long term weather patterns. The impact should be monitored by GAL and the results regularly reviewed by the Noise Management Board (NMB). The target implementation of the protocol should be during 2016 following engagement with airlines, air traffic control and communities.

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Operational Efficiency

Good schedule planning is essential at airports such as Gatwick with constrained runway capacity. Flight delays are exacerbated by the bunching of arrival runway demand caused in part by peaks within the schedule, but also by airline processes and performance which do not consistently deliver aircraft movements on plan (recognising that there are very often network factors outside of airline control, such as weather, industrial action or unplanned equipment outages). Even so, reducing airborne delay will reduce noise impact. This is particularly important late in the day, but at an airport such as Gatwick, airline punctuality is essential throughout the day. Increased focus by airlines for on-time departures throughout the day is vital. GAL is already doing a good job of improving airport performance and should consider further incentivising airlines adherence to schedule.

The majority of residents who expressed a view on night operations at Gatwick sought to reduce the numbers of flights if possible. The review has identified and proposed efficiency measures related to airline scheduling and the introduction by NATS and GAL of improved capacity management tools for Gatwick, which if implemented in full cooperation with airlines and neighbouring air traffic control providers in Europe, can be expected to reduce the numbers of aircraft operations delayed into the night hours at Gatwick, especially during peak period and summer months.

These measures include:

- That the Gatwick Flight Performance Team introduce a KPI, enabling the monitoring and reporting of the number of flights delayed from planned daytime arrival into a night movement (after 23:30 local) and that GAL initiate measures to identify and agree steps, including enhanced use of time based operations, with airlines and with the airport's scheduling committee for implementation within 12 months, to effectively and progressively reduce unplanned night arrivals at Gatwick.
- That within 6 months, GAL and NATS conduct a joint investigation to establish and agree whether the XMAN extended arrivals manager is an effective tool to reduce arrival holding at Gatwick and if so; to agree and publish within 9 months when XMAN can be deployed for Gatwick and what results can be expected.
- GAL and NATS should evaluate the potential efficiency benefits of an earlier implementation of advanced TBS technology (timescale for completion of evaluation within 12 months).

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Noise Complaints Management

As regards the noise complaints policy and procedures employed at Gatwick, the review findings indicate that an overhaul of the airport's noise complaints policy and procedure is an essential step to restore trust in the system for residents sensitive to aircraft noise. The review recommends:

- That Gatwick should establish an enhanced complaints policy and fully transparent procedure, as soon as possible, using an on-line form as the primary medium, requiring sufficient detail to allow the location (postcode) of the complainant, the date and time of day of the incident, such that the aircraft in question can be identified and established with the location, to allow empirical data to be developed and analysed so that noise mitigation action can be taken. There should be no limit to the number of complaints per household. For residents not possessing computer access, postal submissions should be accepted, but should be required to contain the basic information outlined above.

Noise Management Board

It will be evident to any reader of this report that the policies, procedures and imperatives related to the management of aircraft noise disturbance are extremely complex. The complicated multi-layered interaction between the organisations able to effect any change in the impact of aircraft noise is equally complex. Ensuring a consistent combined change management process for noise is essential.

The review has therefore proposed the establishment of a Noise Management Board (NMB) for Gatwick by summer 2016, to be operated under independent chairmanship and comprising representatives from each of the institutions able to effect change for Gatwick arrivals, as well as the chair of the Airport Consultative Committee (GATCOM), and both elected council members and residents' representatives.

The objective of the NMB should be to develop, agree and oversee coordinated noise management strategies for all stakeholder organisations, intended to improve the situation for arrivals at Gatwick and, their implementation and to enhance their understanding by residents, through consistent communication, and both verifiable data and transparent policies.

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Issues that the NMB should consider, as well as from the key airspace and aircraft methodologies and airport efficiencies discussed in this report, should also include topics such as any unintended or unexpected consequences of noise mitigation initiatives and the noise awareness training of operational staff, including air traffic control and pilots. The NMB should also seek resolution of any areas for which leadership and accountability between the institutions is interpreted inconsistently for Gatwick. The Approach Stabilisation Initiative for instance highlighted issues in this area. For airspace design and change planning it is also important to note that NATS has significantly greater influence than GAL on how traffic is managed above 4000 feet.

The review therefore recommends:

- The establishment of a Noise Management Board (NMB) by summer 2016, to be operated under independent chairmanship and comprising representatives from each of the institutions able to effect change for Gatwick arrivals, as well as the chair of the Airport Consultative Committee (GATCOM), and both elected council members and residents' representatives.

Finally the review makes a number of other observations and proposals intended to benefit the development of noise mitigation strategies for Gatwick. In addition to the steps implied within the recommendations, a specific recommendation is included in the report that proposes in the interests of improved community relations, that GAL publish not later than January 31st 2017, a progress report, including relevant status updates from CAA and NATS of the issues and recommendations identified in the Independent Arrivals Review report.

Conclusion

The review has led us to conclude that there are real opportunities to alleviate significantly the noise issues from Gatwick arrivals which have given rise to so many complaints and concerns. These opportunities can be realised to the full only if all of the parties involved work together in new and more effective means of cooperation. We urge everyone involved to agree a programme of action as a matter of urgency and to implement those actions in the same spirit.