ITU-R Workshop on NGSO FSS Sysems – Panel 3 NGSO coordination

List of Techniques in RECOMMENDATION ITU-R S.1431

METHODS TO ENHANCE SHARING BETWEEN NON-GSO FSS SYSTEMS (EXCEPT MSS FEEDER LINKS) IN THE FREQUENCY BANDS BETWEEN 10-30 GHz

1   Homogeneous orbits

2   Avoidance of in-line interference events

2.1   Satellite diversity (switching to another satellite)

Two levels of the implementation of satellite diversity have been identified:

a)   avoidance of near in-line events with all satellites of other non-GSO FSS systems;

b)   avoidance of near in-line events with satellites of other non-GSO FSS systems that are capable of serving, at the considered point in time, that given earth station location.

2.2   Avoidance without switching to another satellite

3   Satellite selection strategies

4   Satellite antenna side lobes

5   Earth station antenna side lobes

6   Frequency channelization

7   Link balancing

8   Alternate polarization

A   Additional techniques that could be added to Rec. S.1431

- Geographic separation of earth stations and associated satellite beams – works well with gateway type links
- Separation of the active arcs between very different NGSO systems – such as HEO separation from other HEO and also from other fixed service arc systems, such as equatorial systems (O3b).
- Separation of the active arcs, relative to the corresponding earth stations. So, for example, one NGSO systems would be active in certain portions of the sky as visible from the earth station.
- Frequency selection during the inline events.

Techniques mentioned above may be used in conjunction, as appropriate.

Techniques mentioned above will require detailed (and maybe realtime or near-realtime) exchange of data between the operators. Hence the need for this to be handled in a bilateral coordination between the operators.

B   Sharing with GSOs in bands subject to No. 9.11A

The same techniques above can also be used but considering the number of filed GSO systems, the most practical solution is in meeting the same EPFD limits that are in Article **22**. Additional limitations such as the ES EIRP limits in Article **22** could be imposed on later-filed GSO systems.