# NEC Develops Mobile Router Enabling Broadband Communication from High-Speed Mobile Objects

July 15 2005

***Realizes wide-range ubiquitous network through wireless LAN & 3G tie-up***

NEC Corporation today announced that it has succeeded in the development of a mobile router that enables seamless broadband communication from high-speed mobile vehicles such as train and cars through the employment of wireless LAN and a 3G (mobile phone) network. Use of this mobile router achieves a next-generation ubiquitous networked environment where uninterrupted communication is allowed even on high-speed moving objects.

The characteristics of this new research are as follows:

(1) Development of a mobile router Litebird (prototype) that handles wireless LAN and 3G. Easy installation in carriages is enabled owing to its miniature size, realizing creation of a mobile communication solution for mobile objects.

(2) Seamless roaming between different medium connecting wireless LAN and a 3G network is realized through mobile IP technology (note 1*), enabling application to a broader network area.

(3) Verification of this technology was carried out through continuous wireless LAN communication (802.11b) employing NEC's proprietary,

fast internet protocol ("IP") handover technology (note 2*), realizing stable communication of over 6Mbps at 200km/h.

This development enables real-time transmission of large volumes of image and voice data from mobile vehicles such as trains and cars, which is expected to realize the creation of a variety of solutions in the future. NEC plans to proceed with this research toward further verification tests of solution cases optimally employing this router.

In 2003, NEC verified wireless LAN communication at 330km/h from a mobile car, confirming the seamless use of two-way, real-time communication and file transmission. Following this, it strove to develop a mobile router best suited to the development of a solution at a practical level; in addition it carried out experimentation tests to enable coordination with a 3G network with the aim of expanding the applicable area, and has achieved the current result as a consequence.

From now on, NEC aims to expand this result to direct inter-vehicle communication in the area of intelligent transport systems ("ITS"), and also plans to verify applicability in areas where communication infrastructure is not in place.

NEC considers that this development will contribute significantly to the realization of a wide variety of solutions, among them the support of safe operation support systems for ITS and trains, real-time transmission of voice and images between data centers and vehicles for particular purposes such as ambulances, information distribution services to passengers, and internet connectivity etc. With this in mind, NEC intends to strengthen its R&D in this field.

This result will be exhibited at Wireless Japan 2005 being held from July 13 - 15 at Tokyo Big Site, Japan.

# NOTES:

1*: **Mobile IP Technology**: IP network mobile support technology standardized by Internet Engineering Task Force ("IETF").
2*: **Fast IP Handover Technology**: This is a proprietary mobility support technology of NEC, which realizes fast handover of IP through the exchange of route registration between layered routers.