***Abstract*— In this letter, we analyzed and compared the performance of dynamic resource allocation with/without channel de-allocation in GSM/GPRS networks. It is quite known that dynamic resource allocation allows communication systems to utilize their resources more efficiently than the traditional fixed allocation schemes. In GPRS, multiple channels may be allocated to a user to increase the transmission rate. In the case when there are no free channels in the system, some of these channels may be de-allocated to serve higher priority calls. The results show that with channel de-allocation mechanism, the voice blocking probability can be greatly reduced, especially at high GPRS traffic load. Besides, the scheme with channel de-allocation mechanism can achieve higher channel utilization.**

***Index Terms*—Channel de-allocation, dynamic resource allocation, GPRS.**