



Utilization of Existing Metro Rail Viaduct for Emergency and Personal Rapid Transit

Prabu Raja

HSS Engineers Berhad, Kuala Lumpur, Malaysia

Naresh Kumar

Rizzani De Eccher, Doha, QATAR

Contact: prabuproficient@gmail.com

Abstract

In the present decade, urban transportation need to satisfy the requirement of the commuter to move faster and at the same time to achieve its affordability goal to the end user. In pursuit of this exploration, infrastructure built to cater the existing transportation modes & network should be utilised to provide a sustainable solution. Accordingly, it has been discussed a new ideology of utilizing the emergency walkway of the existing metro rail elevated viaduct for providing services named Emergency Rapid Transit (ERT) and Personal Rapid transit (PRT). This paper describes about the requirements, pros and cons of implementing this ideology.

Keywords: Elevated viaduct, bridge, emergency walkway, personal rapid transit, emergency rapid transit.

1 Introduction

Due to urbanisation every metro cities are facing huge traffic congestion, due to this people in medical emergency are find difficulties in getting medical attention at right time. To overcome this hurdle, implementing ERT ideology will help a person with medical emergency to reach the nearby hospital on time. This system can be made viable by using a specially equiped automated vehicle which is capable to run over the emergency walkway of existing metro rail elevated viaduct's.

Even through there are several mass rapid transit projects which has been implemented in metro cities to reduce the impact of the traffic congestion, still majority of people prefer to use their own transportation as it provides

comfortable to them. For overcoming this phsycological set back of individuals, in this paper, it has been proposed to explore a PRT system that can accelerate the usage of public transport. Instead of constructing a separate infrastructure for implementing this PRT it is aimed to use existing metro rail viaduct's emergency walkway for this purpose. To make this system viable, an automated driverless vehicle has been conceptualised as explained earlier for ERT.

1.1 Existing infrastructure

Existing system of elevated metro rail viaduct made by either conventional system or precast box girders or precast beam or precast Utrough with reinforced pier and foundation as shown in Figure 1.