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THE INTERSECTION MARCHE-TARAMELLI

FIRST PART: DESCRIPTION OF THE SITE AND ITS IDENTIFICATION

My site is located in Milan, near one of the most important metro station called 'Zara', it is a junction where the principal circular road of Milan passes. The traffic volume along this intersection is too high because of the traffic that comes from the northern part of Milan (also Monza) towards the centre city and the traffic of the circular road. It is an intersection with 'four arms' where the principle street is Viale Marche which is part of the circular road of Milan. There is traffic during all day. The other street, called Taramelli in the south and Arbe in the north, is important because it connects the sub land of Milan with the centre.

This intersection was chosen because:

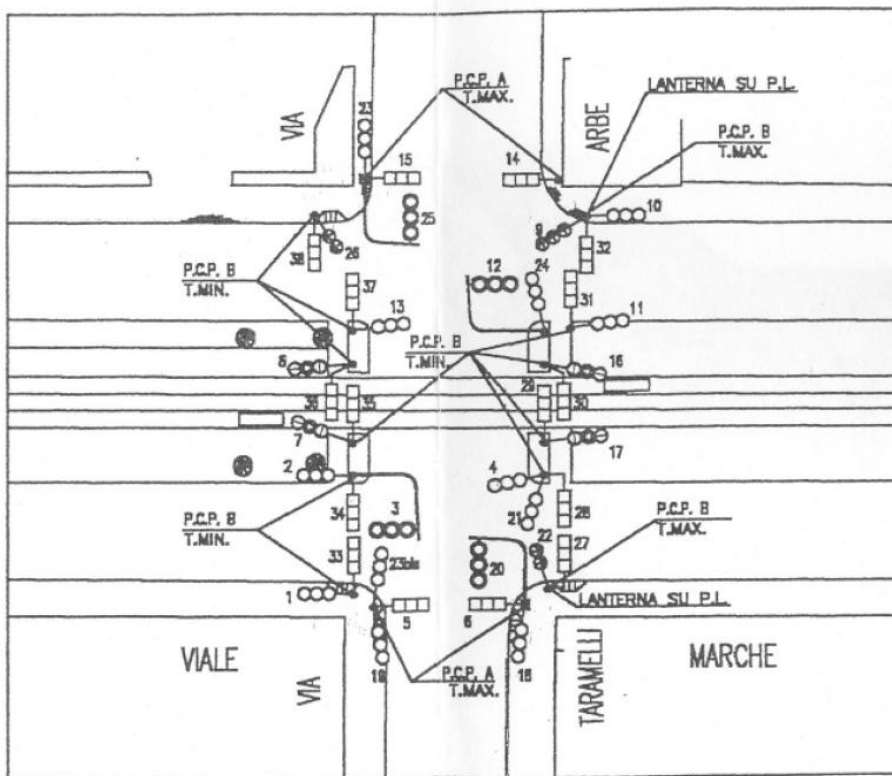
- 1) It's an important point for the development of the traffic of the north of Milan
- 2) There is another important intersection, called Zara-Marche, which has a big influence to the traffic in this intersection.
- 3) Accidents data show a recurring number of accidents.
- 4) The last reason is the future development of this intersection, because the intersection Zara-Marche will be closed in a short time for the construction of line 5 of the subway of Milan. For this reason the traffic in this intersection will be diverted to Marche-Taramelli changing the circulation and the viability of this area. This is represented in the second picture below.

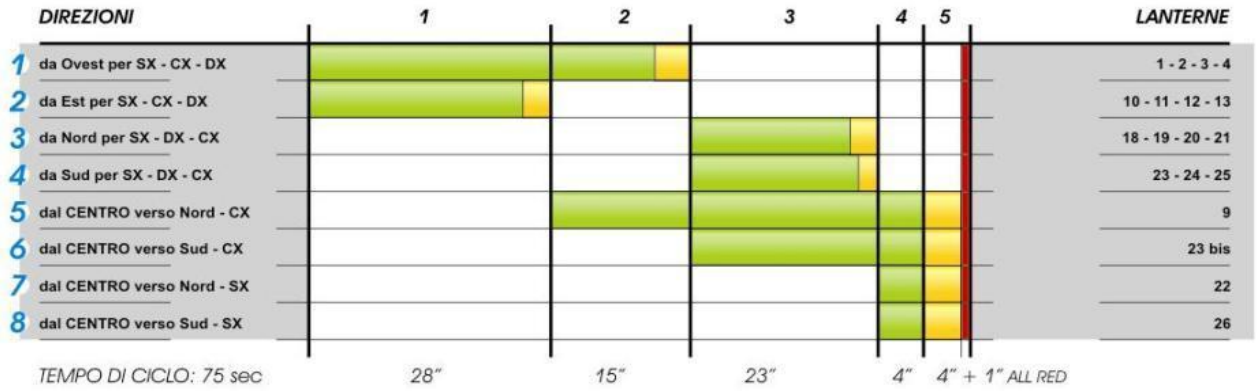


©2006 Europa Technologies
Image ©2006 DigitalGlobe
Google
Pointer 45°29'42.44" N 9°11'46.16" E elev 420 ft Streaming ||||| 100% Eye alt 2010 ft

I investigated the road safety situation and the possibility for intervention at this junction and prepared a study that I presented to the responsible for 'mobility' for the city of Milan (Ingegnere Mobilità, commune di Milano). The study (in Italian) contained the following points:

- 1) A safety analysis (Road Safety Audit and Road Safety Review)
- 2) A presentation of the intersection
- 3) A presentation of the Traffic light system, which is represented in the two pictures below, the first about the position of the traffic lights for the pedestrians and for the vehicles and the second about the phasing of the traffic lights system.





4) A Traffic Survey, for the following time bands:

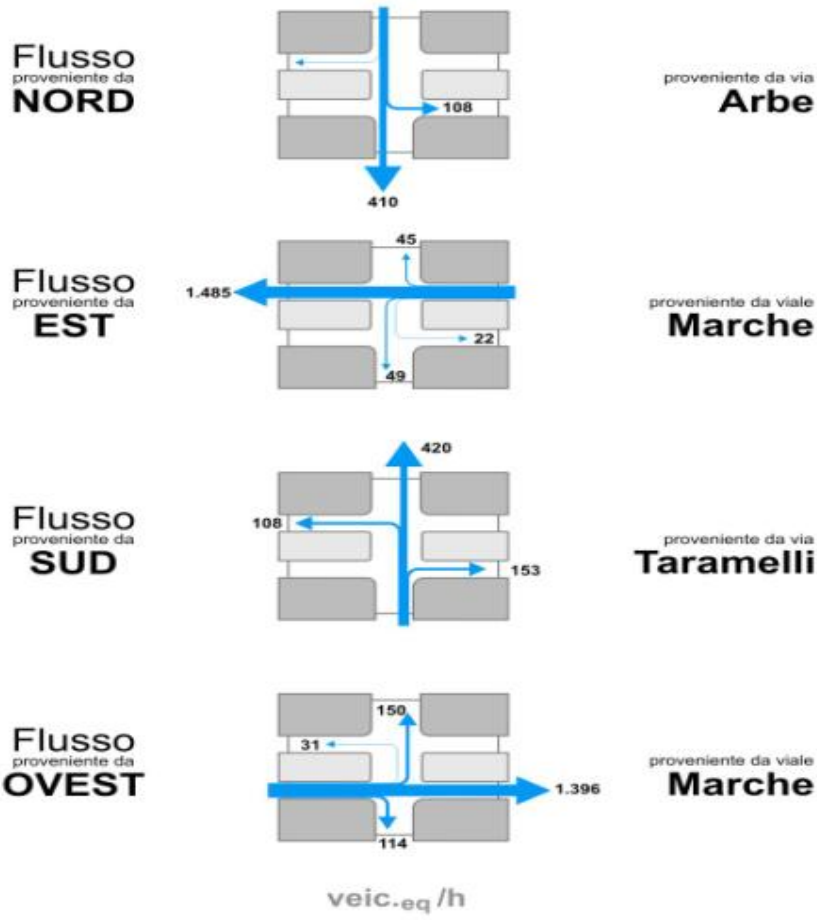
- from 9:00 to 9:15 (morning peak schedule)
- from 12:15 to 12:30 (moderate schedule)
- from 18:00 to 18:15 (evening peak schedule)

They are represented in these three following diagrams of flow:

Morning:

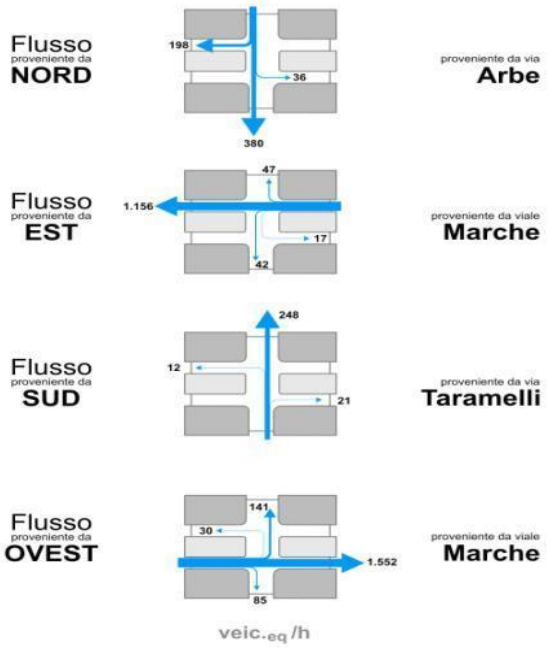
MATTINA

(Periodo di rilevamento 9:15 -9:30)



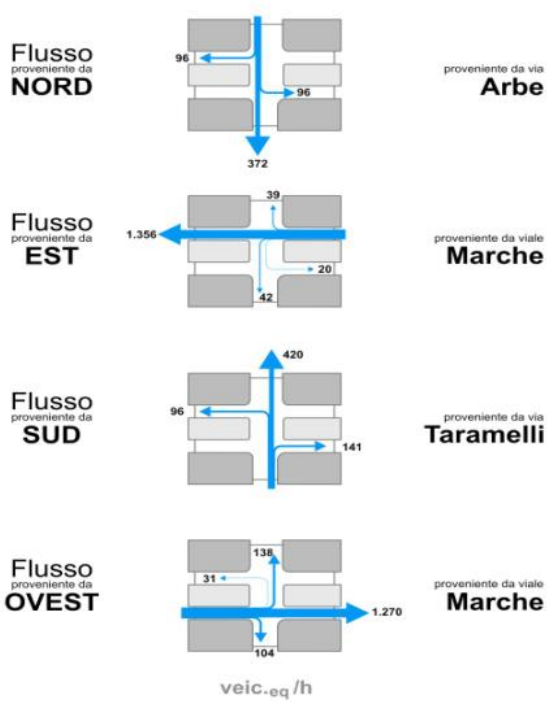
Afternoon (12:30 – 12:45):

POMERIGGIO
(Periodo di rilevamento 12:30 -12:45)



Afternoon (18:00 – 18:15):

POMERIGGIO
(Periodo di rilevamento 18:00 -18:15)



5) An Accidents Analysis



6) An Analysis of critical situations

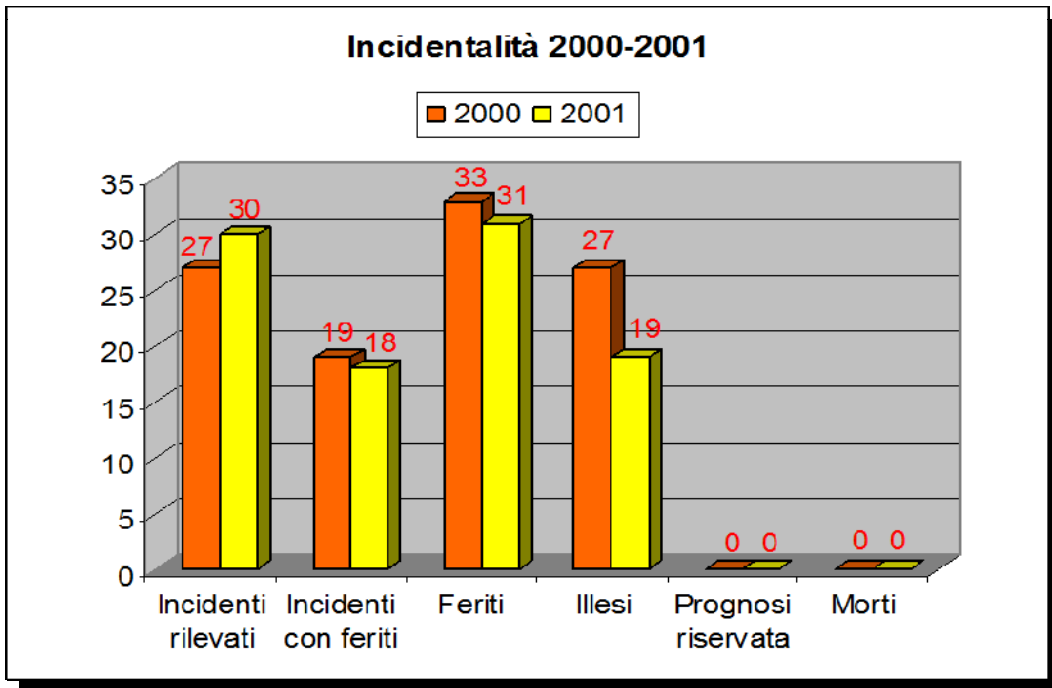


7 and 8) Intervention suggestions and Conclusions

SECOND PART: DATA ON ACCIDENTS IN MY SITE AND CRITICAL SITUATIONS

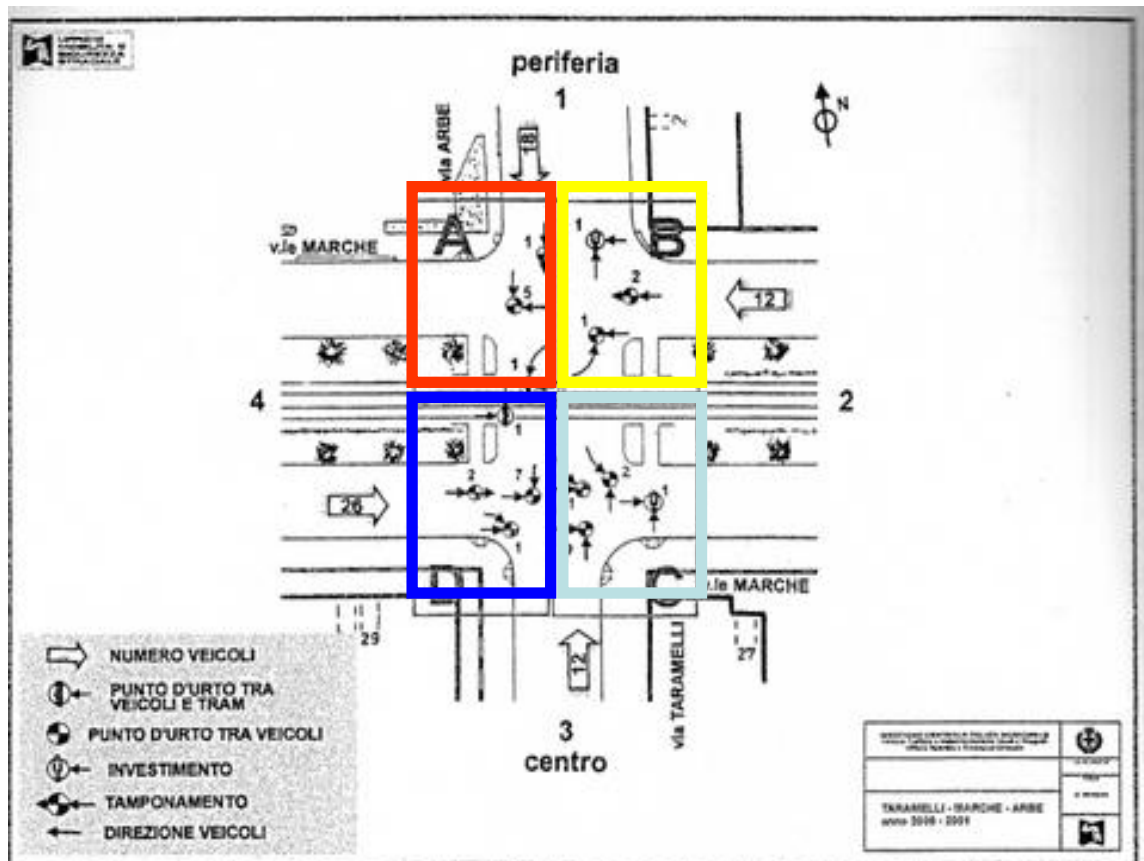
I developed an accident analysis in two ways:

- 1) Aggregate analysis: Indication about features of accidents, and principle causes.

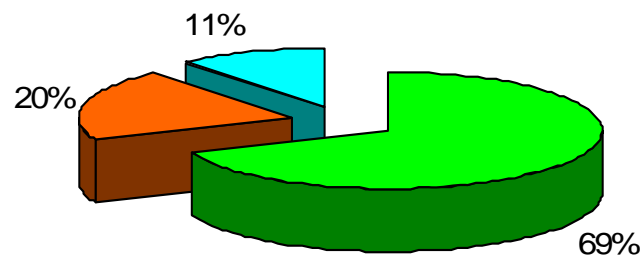


- 2) Disaggregate Analysis: a more thorough analysis about features of places with more elevated risk of accidents, and their causes.

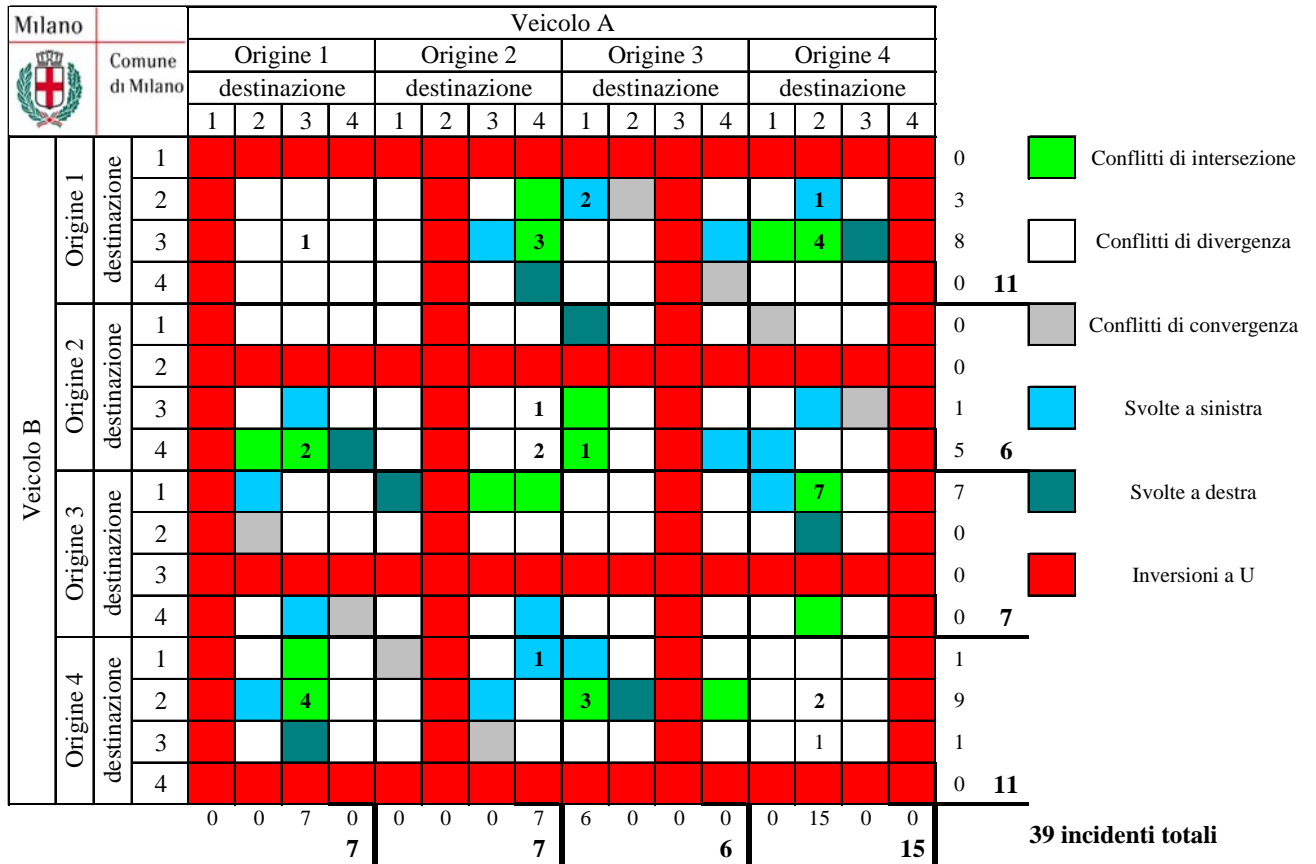
The following picture represents the diagram of collision divided in four parts and for each part accidents were analysed. The second diagram shows the kind of accident more easy to have in the intersection; and the accidents more represented is the intersection. The last one is the matrix of collision in which there are reported the number of accidents in the year 2001.



Tipologia incidenti dedotti dalla matrice tipologica Anni 2000-2001



■ Conflitti intersezione ■ Conflitti divergenza ■ Svolte a sinistra



After this black spot analysis composed of an aggregate and disaggregate analysis, the next step of the project has been the analysis of the critical situations present in the intersection to arrive at the intervention proposals.

To analyse the critical situations I observed the condition of different parts of the intersection:

- 1) The structure of Geometry intersection
- 2) The system of traffic Lighting
- 3) Pedestrians



4) The situation of Parking and Stop, (not regulated)





5) Public transports and the situation of the tram stop



6) Moderation of speed



7) The condition of horizontal and vertical signs



8) The Traffic light System



9) The condition of the pavement





THIRD PART: LIST OF STEPS I HAVE TAKEN IN TRYING TO FIX THE SITE AND A DESCRIPTION OF WHAT I DID

- 1) I had decided to study this site with my professor, Ing. Rinelli teacher in the course of 'Theory of infrastructure and Road Project', in 2007 before applying to the R2R Campaign. This site was chosen after some discussion with my professor and my class about the accidents data, the location of the site in Milan, the condition of traffic, and the future development of the intersection.
- 2) I searched the information and the data about the site in the offices of the province and the commune of Milan through the help of acquaintances of my professor.
- 3) I began to develop the project making the structure and organizing first of all the surveys in site. During the development of my project, I have been followed by my professor step by step.
- 4) I finished the project elaborating some intervention proposals and afterward I made the exam (the mark of my project has been 30/30) and I participated at the seminary in Polytechnic of Milano organized by ETSC with Gabriel Simcic and Antonio Avenoso.
- 5) I made the request for the project of ETSC about Road to Respect, and the end of July I had the positive answer to participate at the camp. The experience in Brussels has been really fantastic for me and I hope to continue with ETSC and pass the next step now to arrive to have the possibility of an internship with ETSC.
- 6) After my return from Brussels I had to report to my professor and to explain the development of ETSC's programme. So I started to work together my professor to contact the administration of the Commune of Milano. And after many attempts, I successfully obtained an appointment with the General Director of the department of Mobility of Traffic and planning of Transport, Ing. Stefano Riazola.

- 7) The meeting with the administration has been satisfying for me because for the first time I had the possibility to meet an important person of the commune of Milano. I have explained my project to Ing Riazola which impressed him. And we started to speak a lot about the situation of this intersection and its development in the imminent future. In fact I proposed the intervention proposed in my study to improve the safety in the intersection but he started to explain that now in this area works will start too in connection to the construction of line 5 of subway; this will modify completely the traffic flow in the area (most probably involving a traffic diversion) and so for this reason he told me that for the time being it will not be easy to improve this intersection because the traffic situation and the data will change. However at the end he was very happy to meet me; he took my report to study it, and he told me that when the works will finish, he will definitely going to make absolutely something to improve the safety in that intersection because it is very important.
- 8) After this meeting I told my professor the situation and he said me that it would be interesting to make a comparison between the situation analysed in my project and the situation during the works that will start soon.
- 9) I know that now my project is in the hands of the Riazola's assistants who are commissioned to see my project and make a report about it.
- 10) The last step it's wait for further feedback from them and meanwhile I'm going to follow the development in the intersection; it will be possible to obtain interventions in the intersection at the end of the period of metro works. My professor really hopes too that I can go work with ETSC as an internship and maybe to develop a thesis together for my studies.

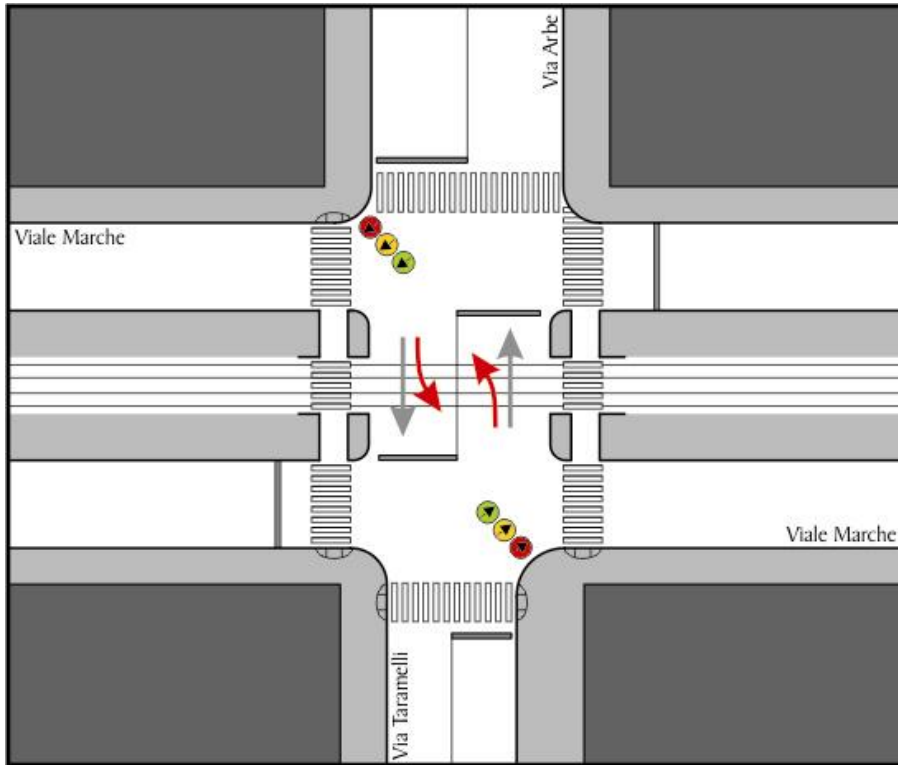
FOURTH PART: EXPLANATION OF THE MEASURES PROPOSED

During my meeting with Ing.Riazola, I proposed some measures to improve the safety in the intersection and to reduce the number of accidents.

The main proposal suggestions have been the followings:

- 1) To change the traffic light phasing to equilibrate the traffic flow in the two main direction and to obtain the intersection free from vehicles during the beginning of the phase of Via Taramelli.

To change the traffic light to left turning with a normal traffic light to turn instead of the only light yellow flashed at present.



2) Because of the speed limit are not respected specially during the night, it could put new automatic detector for the speed with the use of telecamera or with sensors in the pavement.



3) To create bus/tram stop more visibility for the vehicles and to increase the safety near the stop making pedestrian crossing with illumination for the night.



4) One big problem of this site is the conditions of the pavement especially near tram track but also along crossing pedestrians, to resolve this problem it is necessary re-establish the road surface with specific interventions like partial reconstruction, reinforce or surface treatment. These interventions are indispensable for the safety of the intersection; in fact many accidents are caused by pavement condition, specially the accidents with the motorcycles which lose control.



5) To rebuild the horizontal traffic signs and to control the visibility of the vertical signs.



FIFTH: CONCLUSION

The route in this project has been long but at the end I think it's been a fantastic experience and I'm sure that I have understood much about safety, the planning of a project and the respect of road safety. Especially the experience in Brussels has been very interesting and I hope I can return in

Brussels another time to meet ETSC staff and to speak about my project and its development in the future.

At the end I want to thank ETSC for the possibility to know many aspects and many information about transport safety and for the possibility to know special people during the camp in September like Gabriel and Antonio, and all components of the team at ETSC and absolutely the students. I have known young engineer like me and also now I keep in touch with them, guys from Poland, Italy and Spain.

