

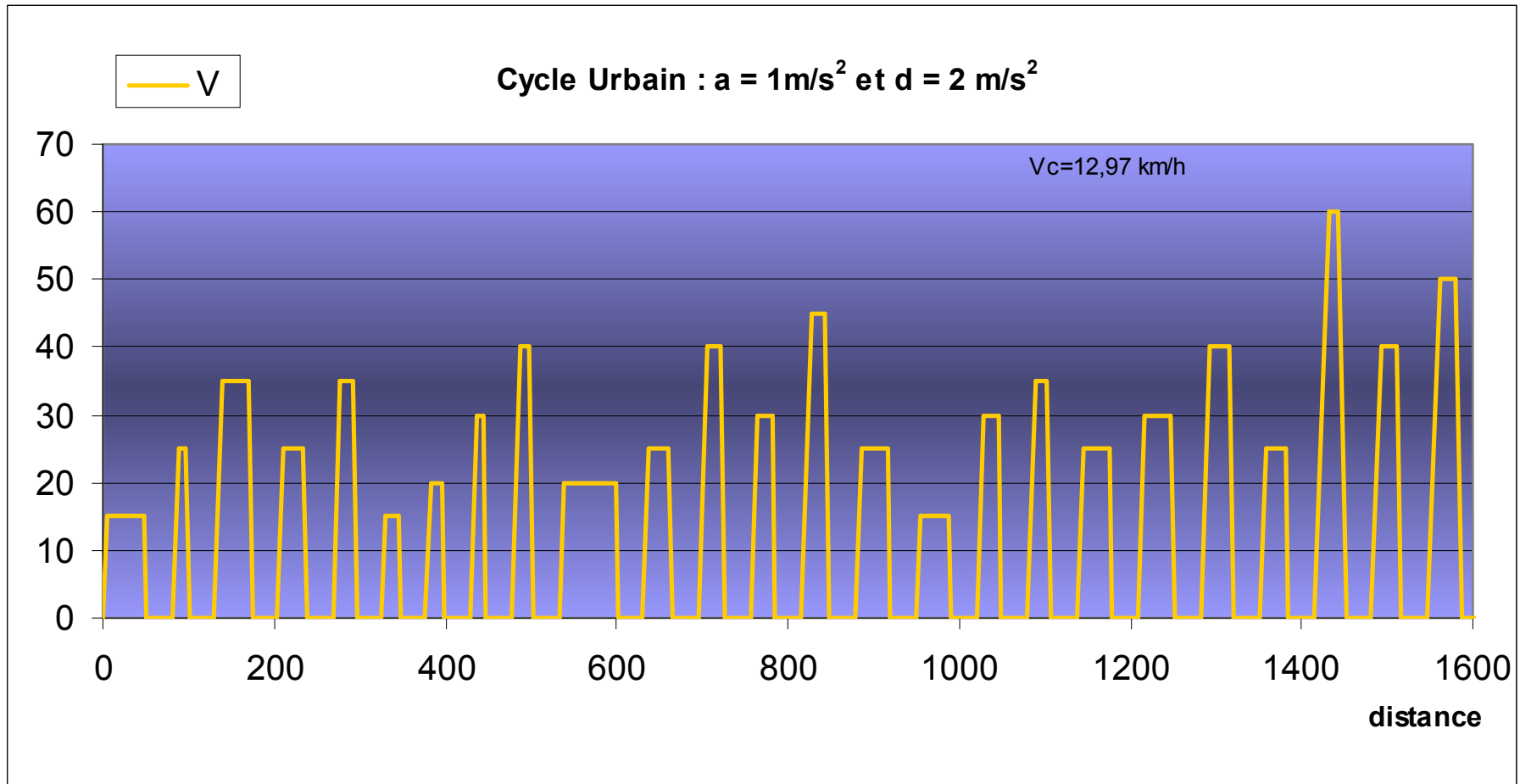


54th UITP International Congress  
20-25 May 2001

# Standardised On-Road Test Cycles - SORT

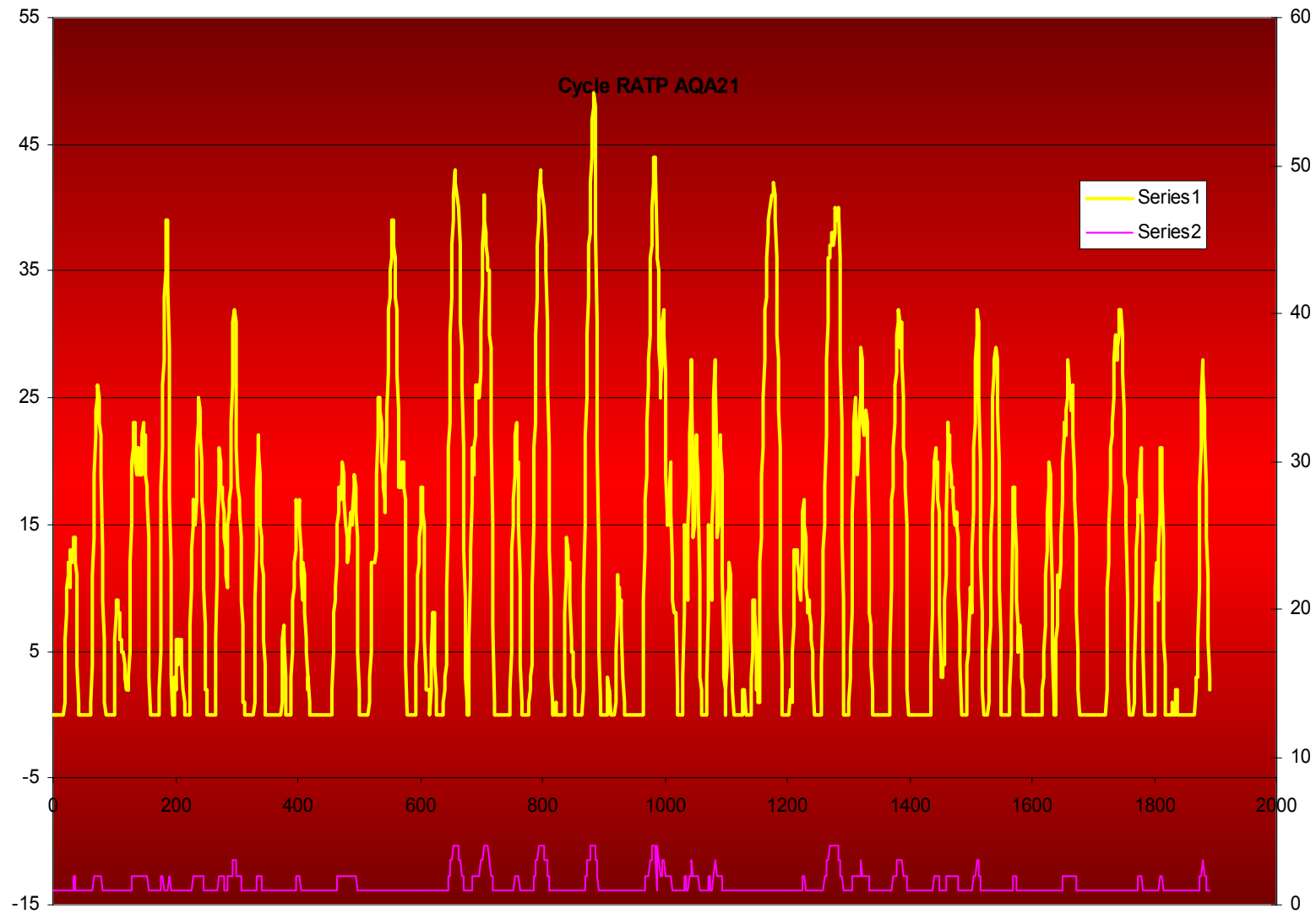
A project of the UITP Bus Committee  
in collaboration with manufacturers





TEC Urban Cycle

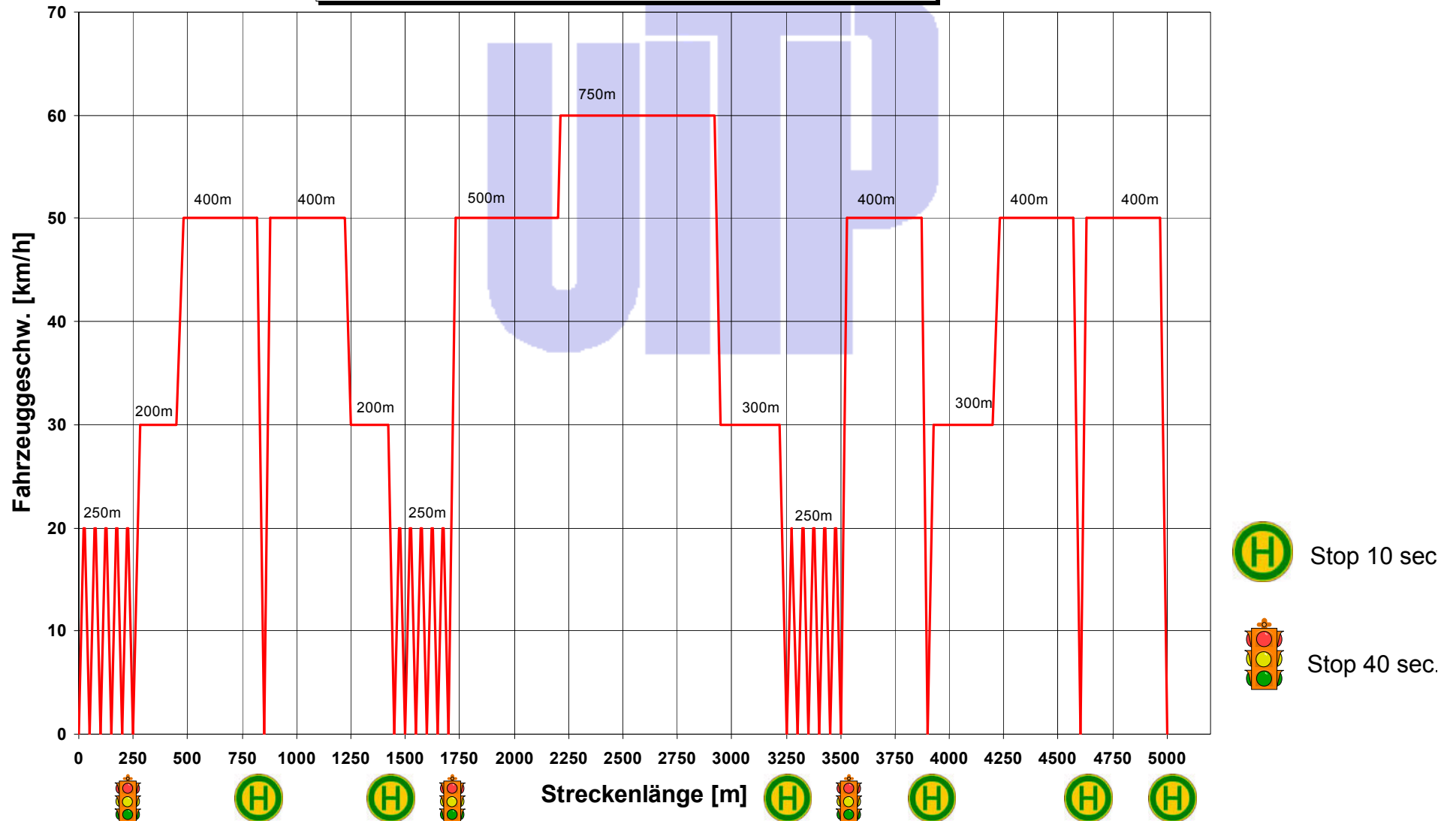
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RATP Aqa 21 Cycle

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# Fahrzyklus zur Kraftstoffverbrauchsmessung



Evobus Cycle

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# Objectives

 Ecological

 Normative

 Technical

 Contractual

 Economical

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# Ecological reasons

- (pollution)
- consumption
- new technologies - results
  - reliability
  - comparability

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# Normative reasons

- Limited relevance of EC norms
  - "13 mode" test
  - new European cycles
- need to test entire vehicles
- (results expressed in g/k)
  - real operation conditions
  - objective comparison

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# Technical reasons

- Large array of cinematic chains possible for same vehicle
- Simplify process of vehicle choice and optimisation
- Avoid quick conclusions in bids
- Availability of comparative information
  - between models
  - between technologies

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# Contractual reasons

- Guarantees on performances consumption
- Possibility to compare bids
- Relevance of a contractual cycle

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The logo for UTP (University of Technology, Perth) is a large, light blue, stylized 'UTP' that serves as a background for the title.

# Economical reasons

- Minimise operation costs
- Minimise costs for official acceptance and conformity control tests

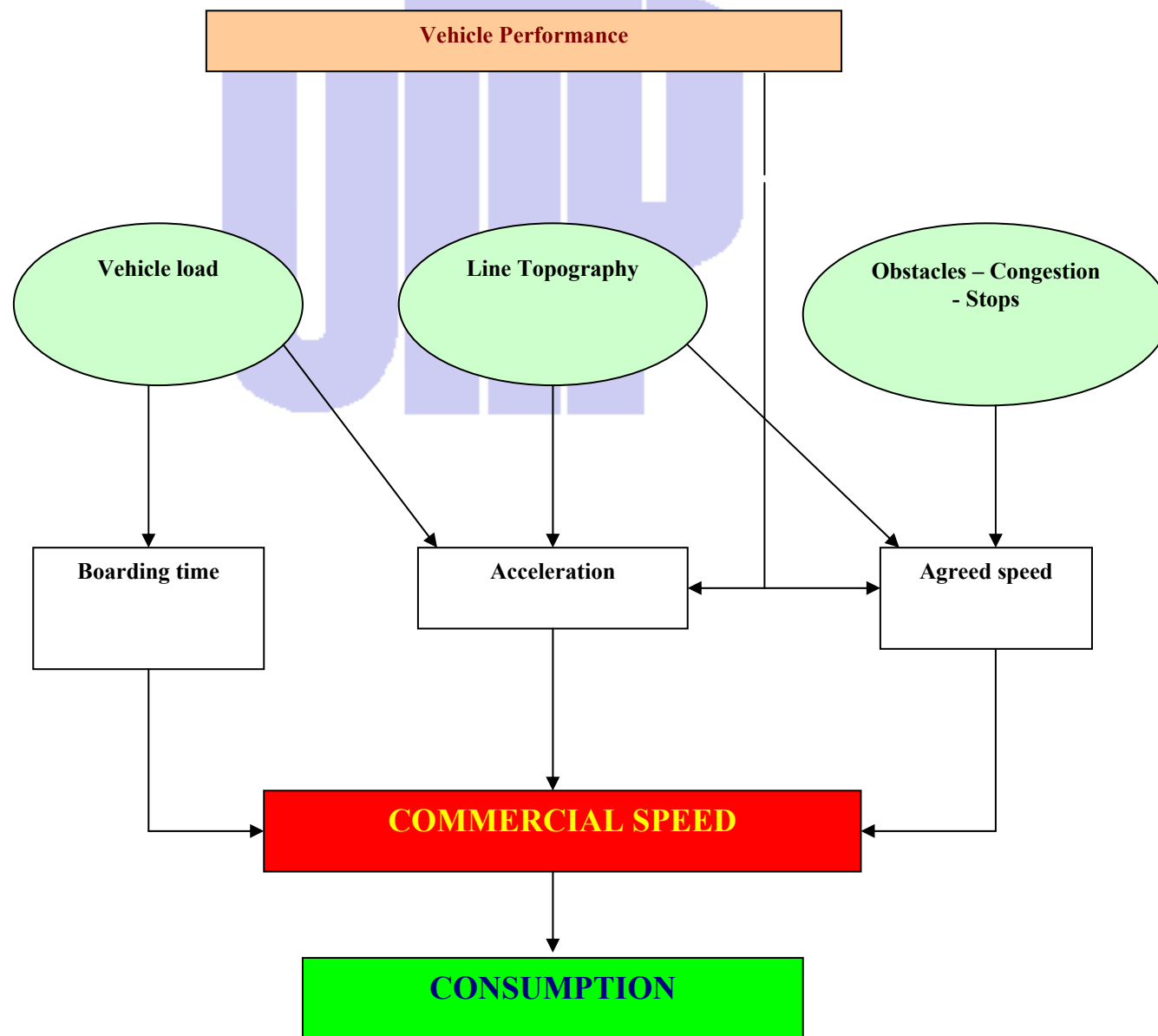
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Standardised on-road cycles  
=  
Advantage for all parties

- Operators
- Manufacturers
- Certifiers

But issues remain to be solved....

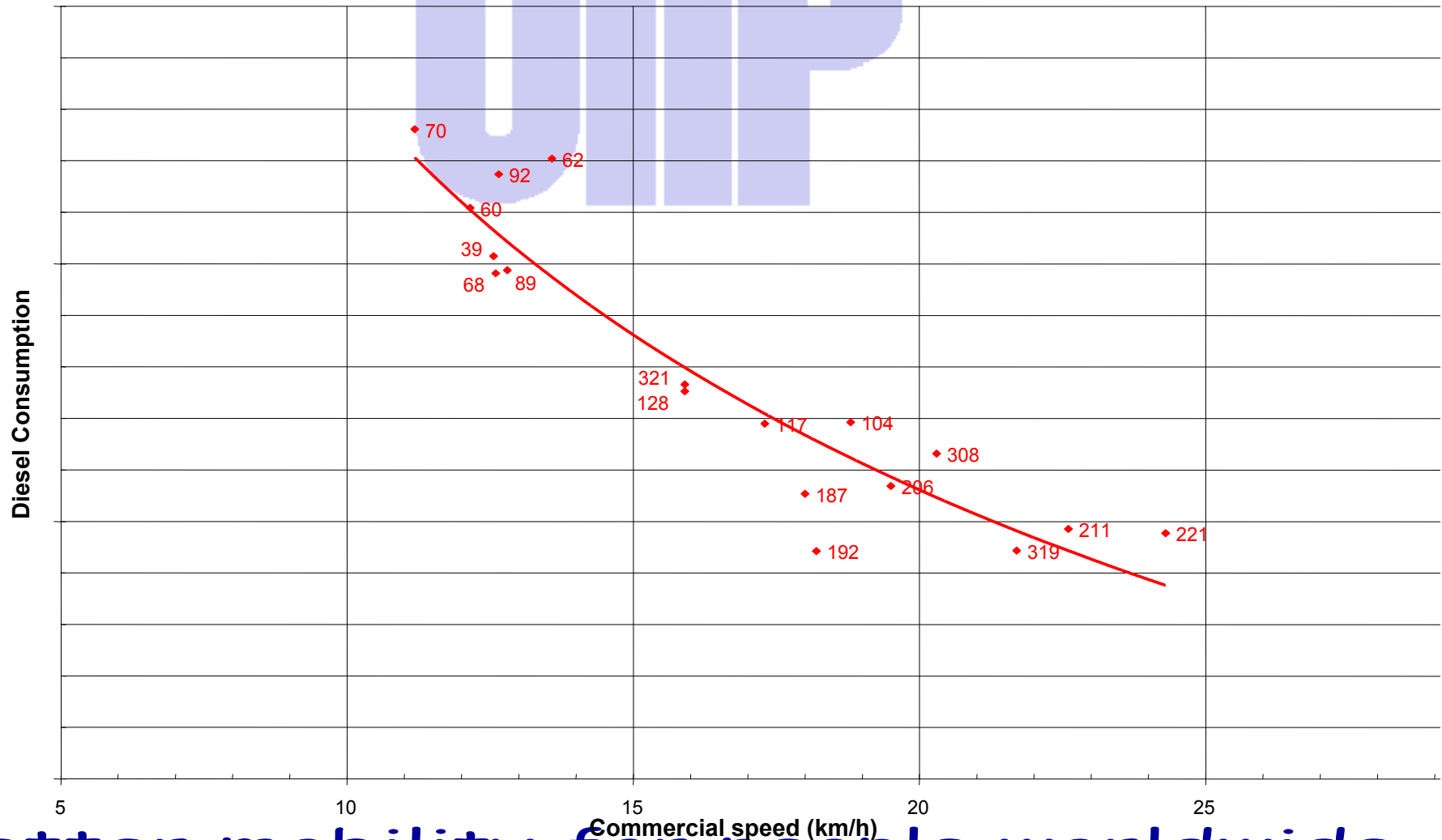
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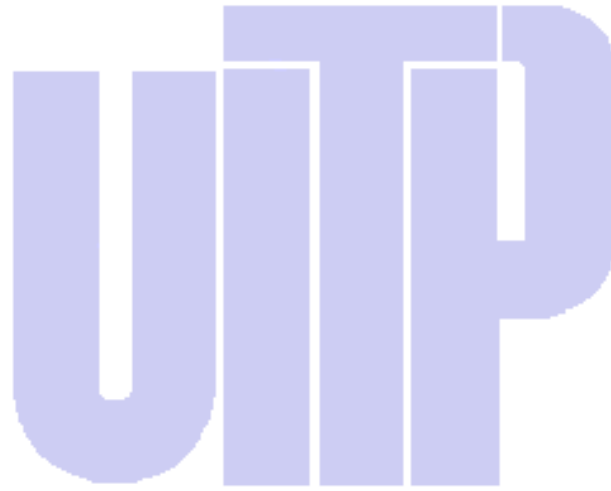
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# CONSUMPTION IS STRONGLY INTERTWINED WITH COMMERCIAL SPEED (Source : RATP)

Numbers indicate line identification.



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- How to design cycles suitable to all?
  - Condition for large scale use
- How to neutralise external factors?
  - Condition for repeatability
- How to design simple cycles?
  - Feasibility condition

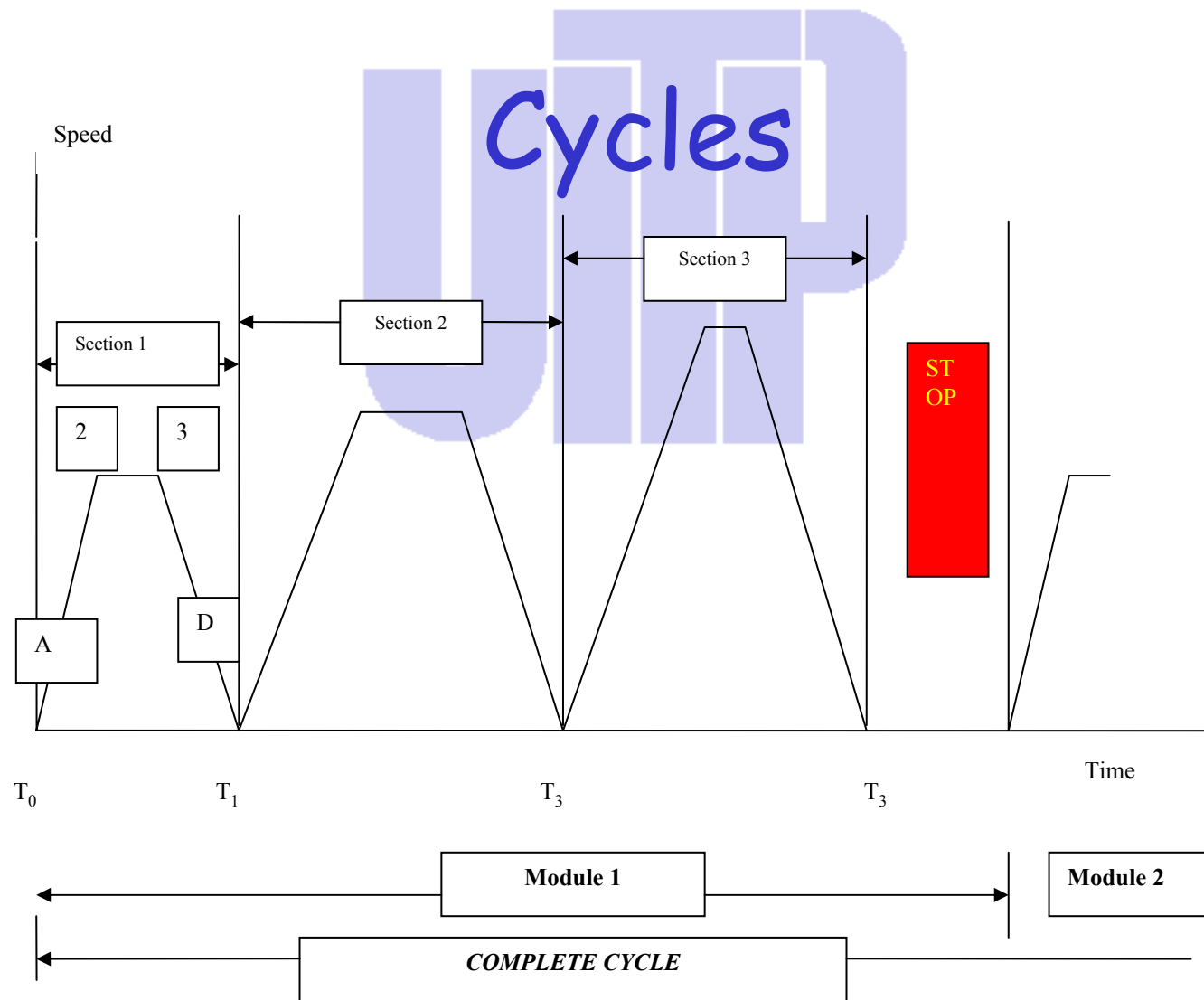
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# Quality of cycles



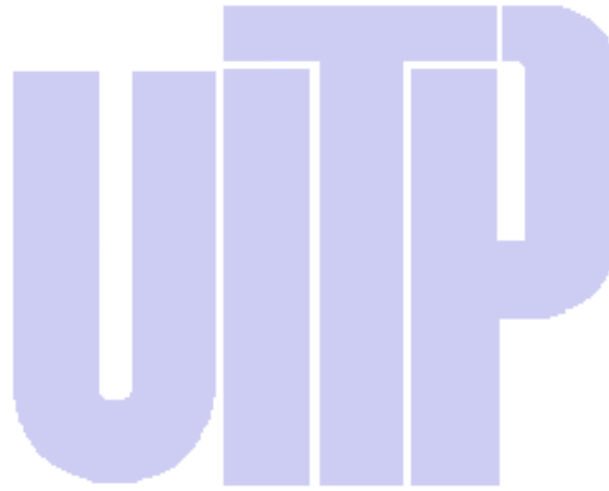
- representative
- normative
- repeatable
- easy to use

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Urban Operation

Suburban Operation

Heavy urban

Easy urban

Suburban

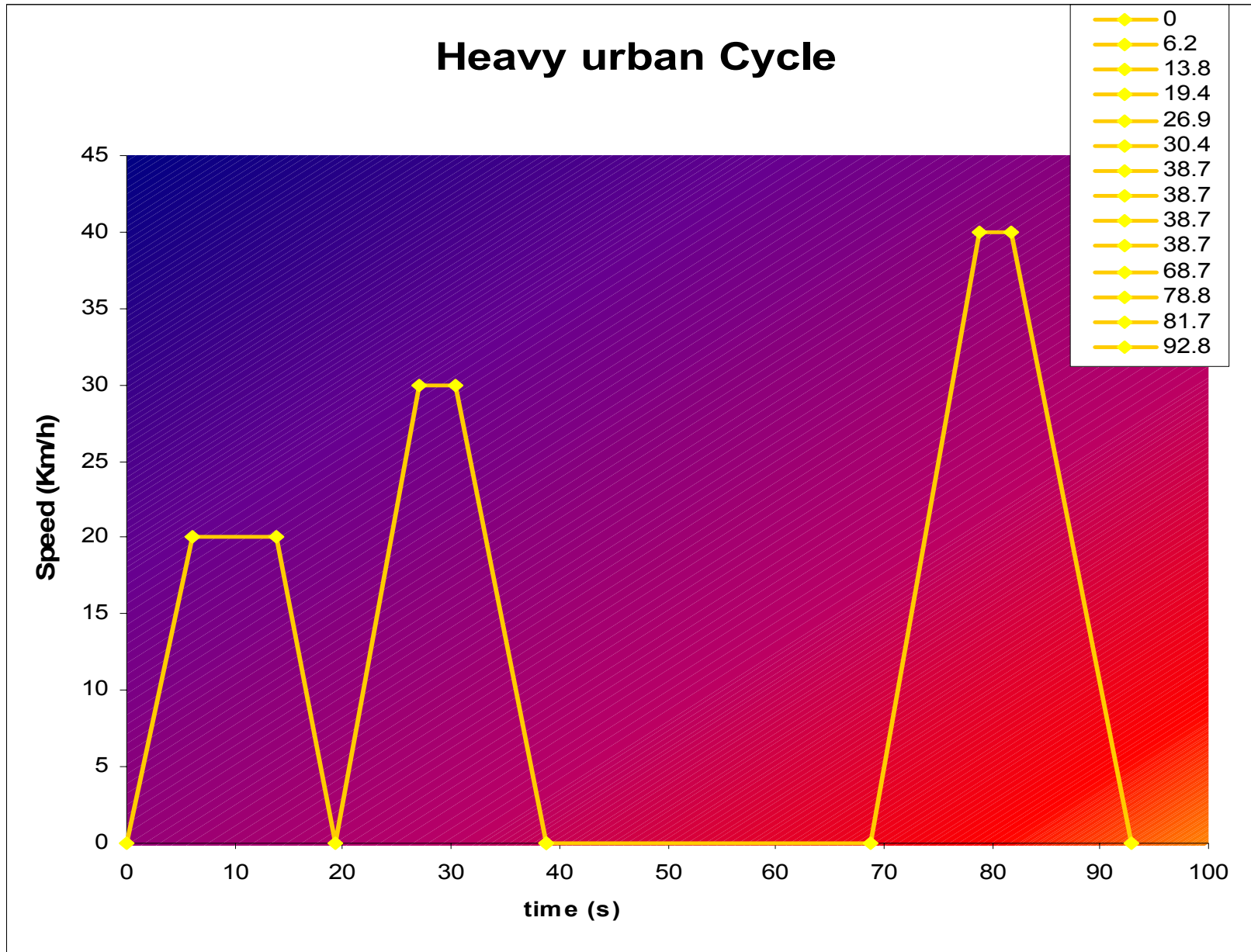


12 km/h

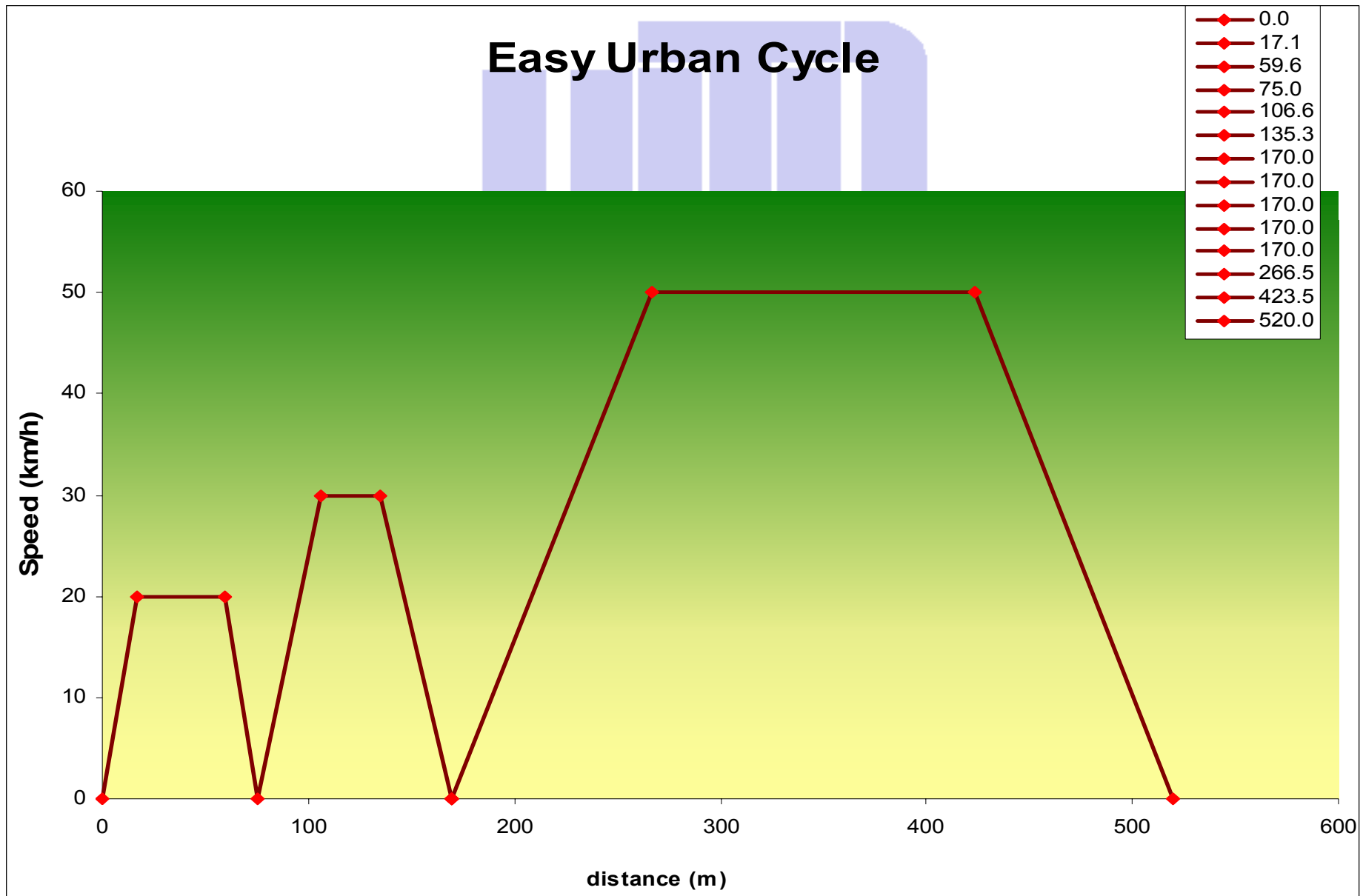
17 km/h

27 km/h

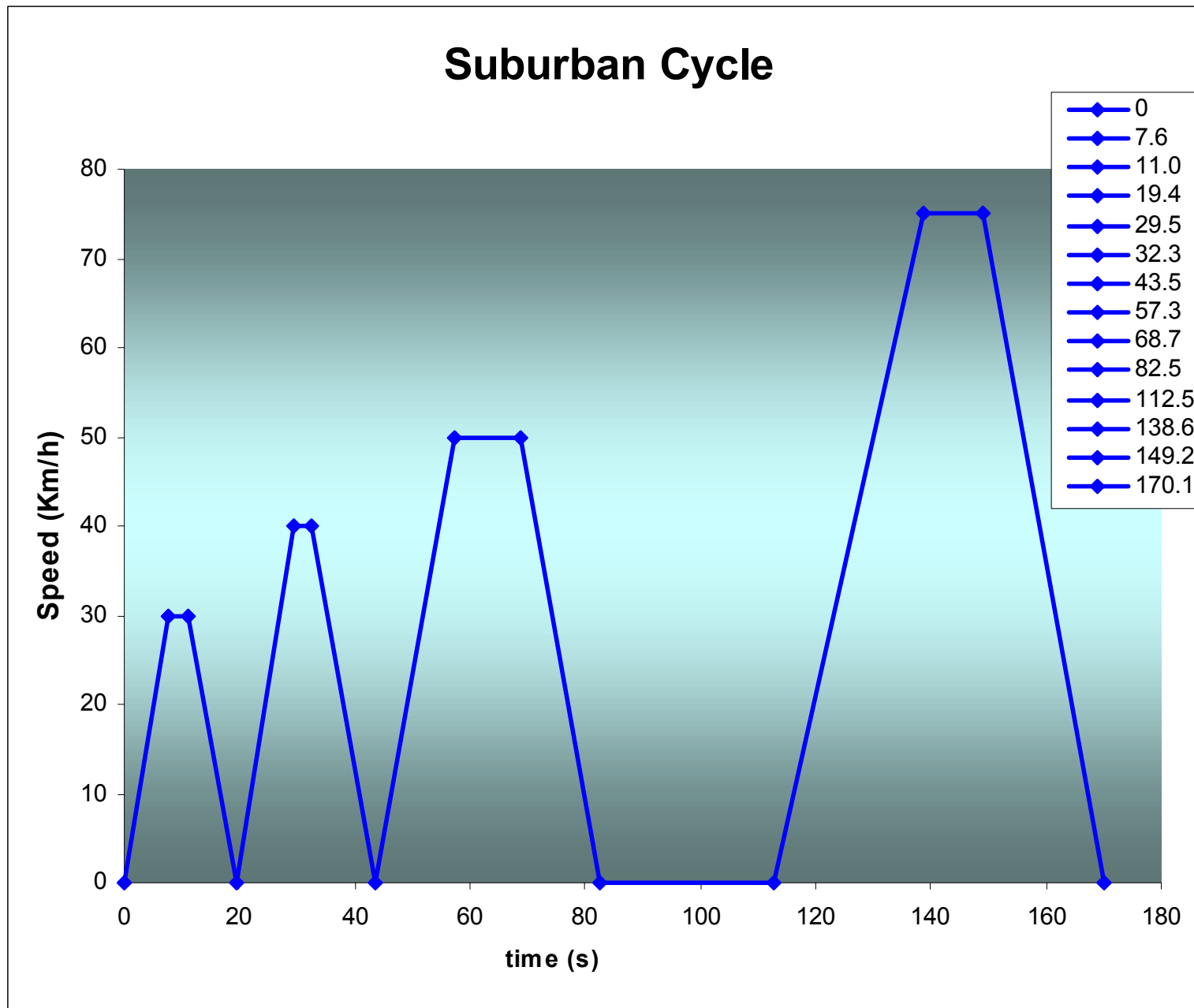
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Urban Operation

Suburban Operation

Heavy urban

Easy urban

Suburban



12 km/h

17 km/h

27 km/h

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# Influence of external factors

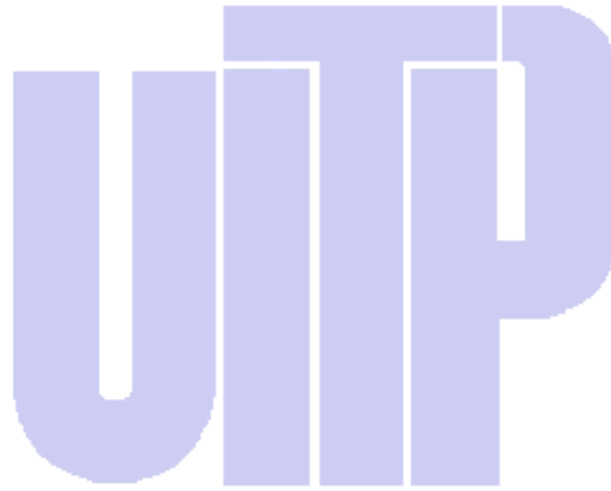
- Rolling resistance
  - independent factors
  - manufacturer's bound factors
- Driver
  - ⇒ relevant to carry out tests on track with computer-aided driving...

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# Characteristics of vehicle to be tested

- half load (3.2 t)
- standard basis equipment (legal)
- no accessories operating
- door open/close operation at end of a module
- run-in engine (10 to 15.000 km)
- nominal tuning (pressure etc)
  - accessories are tested separately...

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*SORT should become a  
standard*

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