Infraco Procurement

Aims of Procurement Group

The tram infrastructure Procurement Group has now had a number of meetings. The initial aim of the Group has been to outline a structure/s for the infrastructure procurement which could form the basis for market discussions, identifying specific areas where key choices will need to be made by **tie** and on which market views will be of particular relevance.

The first stage was the formulation of a set of criteria which would be capable of setting the parameters for the choice of option/s. The Group then sought to agree, in broad terms, on the relative importance of each of the criteria. The Group's view on the criteria, in turn informed the assessment of alternative options.

Assumptions

In approaching the formulation of criteria and assessment of options, the Group made certain important assumptions:

- **timetable** – the current published aim of having initial stage of the network up and running by [2009] was used a guide to the desired timeframe;

- **work ahead of Royal Assent** - it has been assumed that there will be scope to undertake certain preparatory work (potentially significant) ahead of Royal Assent for the Bills.

The latter assumption was of particular importance in terms of timetable. Without a degree of advanced work, the Group saw little prospect of any procurement option meeting the published timetable.

Criteria

The Group decided on 9 key criteria. There is a degree of overlap and conflict between some, requiring a number of trade-offs in deciding relative importance. The criteria are set out as follows (in no particular order):

1. **Risk** - in broad sense: who takes the risk of infrastructure failing to work/costing more to construct/taking longer to construct? This type of risk can be transferred to an infraco partner under certain procurement options, but always at a price. As a general rule, the aim is therefore to transfer risk to those best placed to manage. Considerations in deciding upon the Group's view of risk include:

    - **tie**'s own resources and expertise;

    - timetable implications; and

    - areas where **tie** may wish to maintain control for other reasons

2. **Cost Certainty** - how important is it to have a degree of cost certainty on bulk of costs ahead of committing to main contract/s? Considerations in deciding Group view include:

- source of funding: how much certainty is required in advance on amounts required?

- defining scope: degree of certainty important in planning scope of different phases of infrastructure.

3. **Control** - are there areas of the infrastructure over which **tie** or CEC need greater control – for commercial or other reasons (e.g. policy/planning)? Considerations in deciding Group view include:

    - fact that greater control will generally reduce the opportunity for risk transfer

4. **Timetable** - does the desired overall timetable mean that a *difference* in timetable implications between options becomes important? What scale of difference is considered significant? Considerations include:

    - speed needs to be balanced against a range of other criteria;

    - timing should not jeopardises quality;

    - timing should not over-inflate costs;

    - timing decisions may affect flexibility.

5. **Flexibility of contract** - how important is it to be able to change scope – add or subtract substantial elements? Considerations include:

    - generally, greater flexibility will reduce cost certainty;

    - flexibility may also reduce the scope for risk transfer;

    - degree of flexibility may be constrained by procurement rules.

6. **Flexibility of financing** - how important is it to keep all financing options open e.g. 'conventional' (up front or milestone payment by **tie**), private finance raised by infraco (PFI or PFI hybrid) or others (leasing)? Consideration include:

    - VFM – does opportunity for private finance allow for greater risk transfer and potentially better VFM;

    - profile of funding availability.

7. **Demonstrable VFM** - any selected option clearly must be capable of delivering VFM, but also necessary to be able to *demonstrate* that approach likely to deliver. Considerations include:

    - value of competition for largest cost elements of infrastructure;

    - possible requirement for benchmarking/competitive sub-contract tendering.

8. **Market interest** - is a procurement option likely to prove attractive to the main private sector providers in the market? (This is linked to VFM, since determines likely strength of any competition.) Considerations include:

- familiarity of procurement route;
- balance of risks that private sector asked to take on;
- clarity on project and funding/political support;
- market view of **tie**'s own competence/expertise as procuring authority

9. **Deliverability** - what is the degree of confidence that chosen procurement route will be effective? Consideration include:

- novelty of chosen option;
- potential bidders' levels of comfort with selected option.

Market Consultation

Both criteria **8 (market interest)** and **9 (deliverability)** can only be properly assessed by discussion with potential bidders. For this reason, and given the scale and importance of the project, the Procurement Group is strongly of the view that before committing to any procurement option, a structured discussion with key market players will be essential. Such discussions will provide insights as to the deliverability of an option, allowing key aspects to be refined, as well as providing an indication of likely market interest.

Procurement Group view on relative importance of key criteria

After discussion, the Group agreed on the following broad assessment of the relative importance of the key criteria (noting where trade-offs are necessarily required):

[Sections below for discussion and agreement]

Risk – the general view, given **tie**'s own resources and experience (essentially a procuring body, rather than a major project management organisation) and the scale and complexity of the tram infrastructure scheme, was that we should be seeking to transfer a significant majority of the major project risks to a private sector partner/s. In particular, keys risks to be transferred (at an appropriate price) should include majority of construction risks (cost/delays) and risk that system works (including integration). However, the Group also agreed that there was a willingness to retain elements of risk as an acceptable trade-off in order to:

- retain control over certain key elements (see below); and
- keep broadly within the overall timetable.

Cost Certainty – given the source of the majority of the funds for the project (Scottish Executive) and the potential difficulty in obtaining further funds once the project approved and underway, the Group's view was that a degree of certainty of costs was important. Whilst this was not an immediate requirement, it would be a priority ahead of signing the largest

contract (covering the bulk of construction).

Control – the Group considered that there are at least three, and possibly four areas, over which the advantages of **tie** retaining a degree of control outweighed the possible erosion of risk transfer. These areas are:

- **choice of vehicles:** given the considerable consolidation within the tram supply market, allowing for a market response *inclusive* of tram supply will severely reduce the number of infrastructure tenderers and could compromise final selection, pricing and risk transfer. For this reason, the Group agreed that there was strong case for **tie** to separately develop a tram supply, commissioning, maintenance and spare parts supply contract. Key would be the timing of such a contract and arrangements to migrate into the main infrastructure contract.

- **design:** given the particular sensitivity of sections of the line within the World Heritage centre and the known concerns of the Council's planning authority, the Group agreed that there was merit in considering a preliminary package of targeted design work ahead of the letting of any main infrastructure contract. The aim would be to assist with the development of designs that are likely to satisfy planning requirements, reducing risk and wasted design work and speeding up the overall timetable. Key would be determining an appropriate level of work that would prove most useful to potential bidders, without distorting overall costs, and without delaying the letting of a main infrastructure contract.

- **utility diversion:** time consuming and high risk element of the project. If **tie** were able to gain a greater level of certainty on requirements, this could assist both in accelerating the timetable (see below) and in reducing risk for main infraco contractor (with impact on deliverability and cost).

- **system integration:** given the importance of systems integration, and similarly limited market, Group considered that **tie** may wish to have greater control/visibility over this aspect of any consortium. Whether this required a separate initial contract (as with vehicles) is more open to question, given importance of transferring this risk to bidders.

Timetable - if possible, the Group favoured an option that would potentially allow for a significant proportion of the network to be open by [2009]. If a procurement option had no prospect of meeting this deadline, the Group therefore considered that it would need to be justified by very good other reasons if such an option were to be pursued. This priority also pointed towards a proportion of advanced work being carried out early on, irrespective of the option chosen for delivery of the bulk of the construction (see above).

Flexibility of contract -the Group recognised the trade-offs between cost certainty and risk transfer and flexibility. Nevertheless, it was agreed that the preferred procurement option, as a minimum should be potentially capable of delivering the network through a series of stages, via a single initial procurement. Defining the first, and most certain initial tranche would be essential (and would need to fit the affordability constraints) but as the most effective means of handling future integration issues, **tie** should attempt to retain the *option* of retaining the same private sector partner for subsequent tranches, and network expansion, subject to VFM.

Flexibility of financing - the view was that it was important to maintain all financing options at this stage, in particular the option of private finance at the infraco level, via PFI or a PFI hybrid, given the potential for greater risk transfer and VFM, and the potential issues in

relation to the profile of funding available from the Scottish Executive.

Demonstrable VFM - Group agreed on importance, given high profile and scale of project, in context both of Scottish Executive VFM and local authority best value obligations. Ideally, this could most clearly be demonstrated via a transparent and strong competition for the main contract. This in turn would require the Group to be satisfied on likely market interest and deliverability (see below).

Market interest - Group view endorsed importance of market soundings to test option/s with private sector.

Deliverability - Group agreed that **tie** option needed to build on best practice and lessons learned from other projects without introducing unnecessary novelty. Key would again be the views of potential bidders through market test.

Options Considered

Drawing on the combined experience of the DPOF Group and on the procurement approaches used on comparable projects within the UK and Europe, the conclusion of several workshops narrowed the range of procurement routes to six options:

OPTION 1	OPTION 2	OPTION 3	OPTION 4	OPTION 5	OPTION 6
Fully integrated consortium delivering infrastructure, vehicles and equipment	Consortium delivers infrastructure and equipment. Trams procured separately but novation of supply contract to Infraco	As for Option 2, but specific control over system integration by means of separate agreement	JV between vehicle supplier and infrastructure provider offering risk bearing equity	Infrastructure development partner. Incremental procurement based on open book and target cost	Traditional independent procurement by **tie** for each element of the system
Possible Form of Contract PFI model permitting project finance 25 year term	Possible Form of Contract PFI Hybrid permitting project finance/leasing 25 year term	Possible Form of Contract PFI Hybrid permitting project finance/leasing 25 year term	Possible Form of Contract PFI Hybrid permitting project finance 25 year term	Possible Form of Contract PPC 2000/NEC partnering contract Term to match DPOFA	Possible Form of Contract Standard ICE conditions JCT from contract. Maintenance agreements to match DPOFA term

Each option was scored against a wide set of criteria which the DPOF Group considered important in terms of overall fir with **tie**'s objectives and constraints and fit with the DPOF contract and deliverables during the development phase up to the letting of the major infrastructure delivery and equipment supply contracts. The criteria correspond to (and overlap within) the key criteria discussed in the earlier section of this paper, and for completeness, a scoring template is included as Appendix I, as are functional diagrams (Appendix II) explaining contract structure. The DPOF Group then reviewed the results of

this exercise critically. As a further analysis, scores were weighted and finally four fundamental requirements were selected from the evaluation criteria: Delivery to Programme, Risk Profile, Cost, Flexibility and applied to each of the six Options.
This process produced a clear preference for Option 2 and Option 4 as demonstrated by the table below and broadly confirmed the results obtained under wider criteria.

Option	**Early commencement and delivery to programme**	**Risk Transfer**	**Cost**	**Flexibility**
1 - Full Consortium	4	4	4	5
2 - Trams Out	2	1=	1	3=
3 - Trams and Systems Integration Out	2=	3	2=	3=
4 Joint Venture	5	5	5	6
5.Partnering Agreement	1	1=	2=	2
6 - Traditional Procurement	6	6	6	1

In the context of procurement routes, the DPOF Group examined those elements of the infrastructure and equipment supply package which classically contain unpredictable cost, risk and programme implications and therefore represent potential threats to affordability. As mentioned, three primary areas have been identified:

Public Utilities

The experience is in the UK that the time and cost required for the location and diversion of utilities and services apparatus from streets within the limits of deviation is inordinately high and difficult to estimate. The ability to forward plan and implement utilities works in advance has considerable merit and relieves the infrastructure provider from finding itself in a poor negotiating position with the utilities. tie and CEC are in a better position to tackle and cordon off arrangements (and risks) related to these unavoidable works

Design Approvals

Lines One and Two now have a Design Manual. Nevertheless, the process of detailed planning approvals for tram infrastructure and street furniture to be installed within the Edinburgh World Heritage site has the potential to cause cost escalation and non arrestable programme slippage. The preparation and submission of detailed design for planning approval regarding sensitive areas or infrastructure components with aesthetic impact should be considered as a means to de-risk infrastructure delivery cost.

Third Party Interface

The construction and physical integration of the tram network into existing public transport infrastructure will require the agreement of commercially interested parties e.g. the roads authority, Network Rail and heavy rail parties. **tie** has the option to progress these agreements (with the support of the DPOF Operator) to a point where the understanding reached will represent engineering solutions with associated delivery responsibilities which can be understood and priced by the Infrastructure Provider of particular importance is the securing of railway possessions through engagement with Network Rail whose approach will be cost, risk and responsibility averse.

Tram Procurement

The view of DPOF Group is that a separate tram supply procurement will increase cost control and the ability to maximise opportunity to explore appropriate long term financing options for the tram fleet required for the core network and possible incremental system expansion. This approach should protect the procurement of infrastructure from the distortions produced by limited choice of vehicle suppliers. DPOF Group is examining the optimal placement of vehicle maintenance responsibility. Advantage are perceived to outweigh the issues arising from management of a contractual interface between vehicle and infrastructure providers which the DPOF Group envisages through a novation of the tram supply contract.

The preferred options

The strategy of creating a start-point for the infrastructure provider which has certain significant risks removed or controlled will require expenditure well in advance of the projected date for Royal Assent for the two Bills. This work entails not only a programme of advance works carried out by or on behalf of **tie** and paid for with Scottish Executive funding but also the preparation and execution of procurement processes to engage the relevant contracts to programme. Consequently, both CEC and Scottish Executive would need to approve use of public funds in anticipation of Royal Assent. Indeed, the process of selecting and appointing an infrastructure provider, no matter which procurement option is selected is unlikely to take less than nine months, requiring commencement of the process latest in Q2 2005 to permit an award of contract and contractor mobilisation in Q2 2006.

It can be appreciated that the work required to develop work packages to the degree where these can be described comprehensively for negotiation and tender purposes needs to commence now.

In comparing Option 2/3 and Option 5 as a means to achieve the correct balance between cost control, risk transfer, flexibility and delivery to programme, the project management aspect of the four packages discussed above is relevant. Under Option 5, **tie** would delegate the responsibility for managing and delivering these services, supply and works contracts to an appointed infrastructure partner. Under Option 2/3, **tie** would retain a much higher level of control and therefore risk - in exchange for cost visibility through a direct relationship with the party carrying out the works or providing the services. Under the partnering Option 5, the detailed design services would be procured and managed by the infraco partner but **tie** itself could arrange this.

A further distinction between Option 2/3 and Option 5 is the way in which contract price would be determined. Option 5 envisages the agreement of target costs built up by the infrastructure provider and agreed periodically by **tie** using an open book methodology. Option 2/3 would deliver a lump sum price under competition for all aspects of the infrastructure installation and maintenance. Of the two Option 2/3 lends itself better to long term funding commitment being made imposing an additional discipline to hold costs within budget and completion to programme.

Next steps towards a definitive procurement strategy

In order to complete the design of an infrastructure and equipment procurement strategy, the DPOF Group recommends that market sounding takes place in the same fashion as served the DPOFA procurement well. The proposed contractual options can be appropriately tested for private sector and funder reaction and can gain from the DPOF Operator's contribution post

appointment. The main questions which **tie** would canvass in the consultation process would deal with:

- the separate procurement of trams, related timing aspects, future purchase options to increase fleet size, financing possibilities, technical issues arising from wheel-rail and vehicle signalling interface; Contractor attitude to novation;

- Detailed design for high sensitivity areas on Lines One and Two and the most elegant contractual means of achieving design risk acceptance/transfer without adverse resourcing and cost implications;

- Advance works for public utilities and responsibility for supervision and execution;

- Third party interface agreements- delegated functions as opposed to novation; Networkrail standard protocols, GWA and Maintenance agreements

- System integration responsibility;

- Operator - Infraco relationship evolving from the DPOF Bid Offer side letter;

- Incremental construction and potential for framework agreement.

- Market attitude towards tendering prior to Royal Assent (appetite, bid cost support)

APPENDIX I

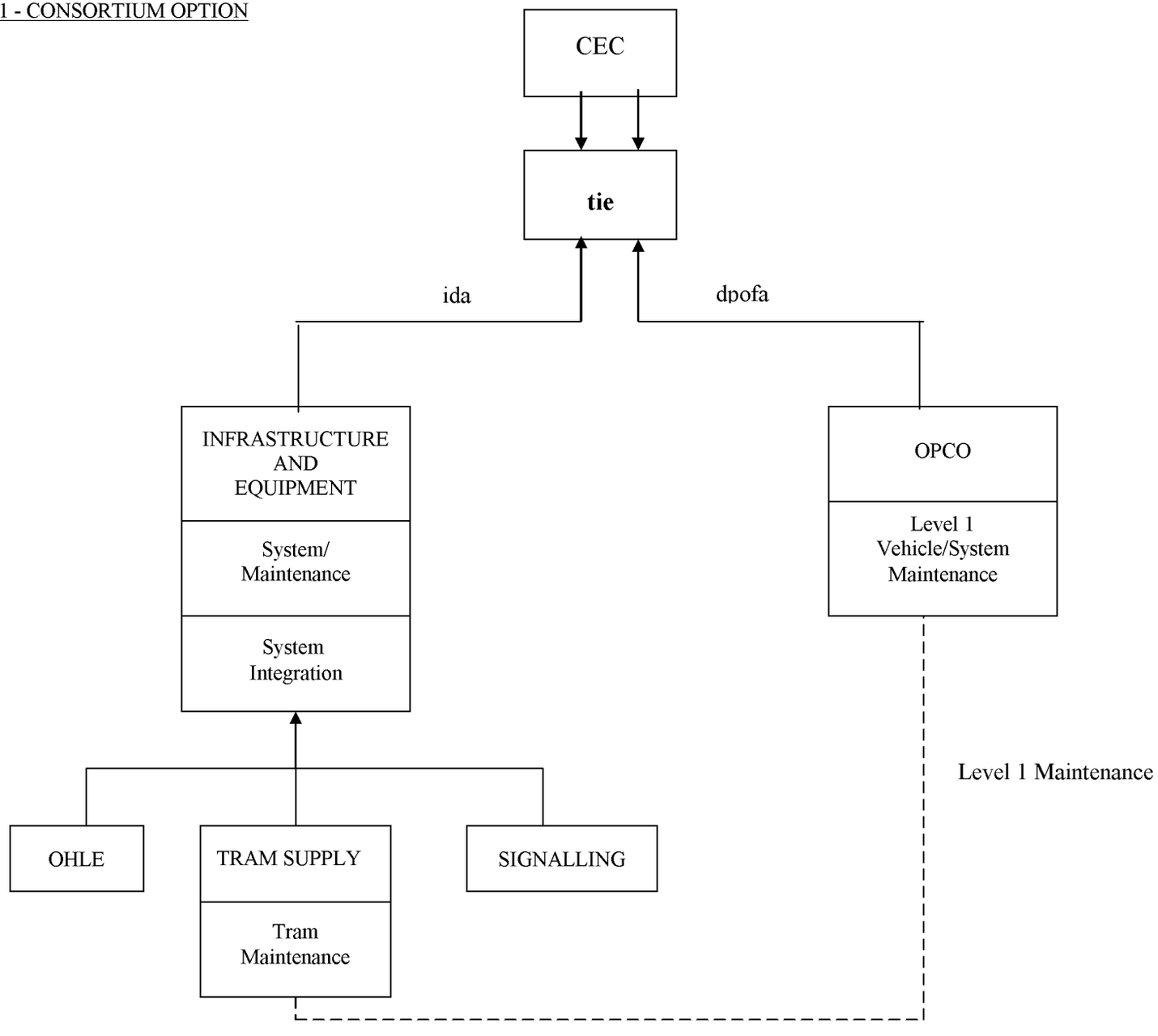
		Option 1	**Option 2**	**Option 3**	**Option 4**	**Option 5**	**Option 6**
		Consortium option- including tram procurement (excludes operator)	Separate procurement of vehicles; novation of vehicle contract into single consortium responsible for all elements of infrastructure.	As Option 2. but additional control over system integration function within consortium.	'Arranged' JV between vehicle supplier and infrastructure consortium – each providing risk-bearing equity	Infrastructure development partner – incremental approach, based on open book/target costs	Traditional procurement by tie (tie itself procures separate elements of system without single partner)
1	Overall Programme	2	1	3	4	5	6
2	Deliverability of procurement strategy	3=	3=	3=	6	2	1
3	Flexibility/tie control	5	3=	3=	3=	2	1
4	"Expandability"	3=	3=	3=	3=	1	2
5	Market appetite/response	4	3	5	6	2	1
6	Affordability	5	2	3	6	4	1
	Availability of Funding:(tie level; infraco level; subcontractor level)						
7	tie level	√	√	√	√	√	√
8	infraco level	√	√	√	√		
9	Subcontractor level	√				√	
10	Private Finance	2	1	3	4	5	6

		Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
11	VFM	3=	2	3=	3=	6	1
12	Risk transfer	1	2	3	3	5	6
13	Risk mitigation & management	1	2	3=	3=	5	6
14	Cost certainty	1	2=	2=	5	6	4
15	Cost Visibility	5	3=	3=	6	2	1
16	Project management (tie, infraco)	1	2=	2=	4	5	6
17	Interface management (UTC/ parking/ticketing)	1	2=	2=	2=	5	6
18	System integration	2	3=	1	5	3=	6
19	Operator Interface management (eg commissioning, operations, default rectification)	2=	1	2=	2=	5	6
20	Maintenance delivery	1	2=	2=	5	2=	6
21	Utility diversion	n/a	n/a	n/a	n/a	n/a	n/a
22	Network Rail	n/a	n/a	n/a	n/a	n/a	n/a
23	Design/ Output Quality	3=	2	3=	3=	2	1
24	Statutory Approvals	n/a	n/a	n/a	n/a	n/a	n/a
25	Procurement timescale	5	2	3	4	1	6
26	Cost of procurement (tie)	2	3=	3=	3=	1	6

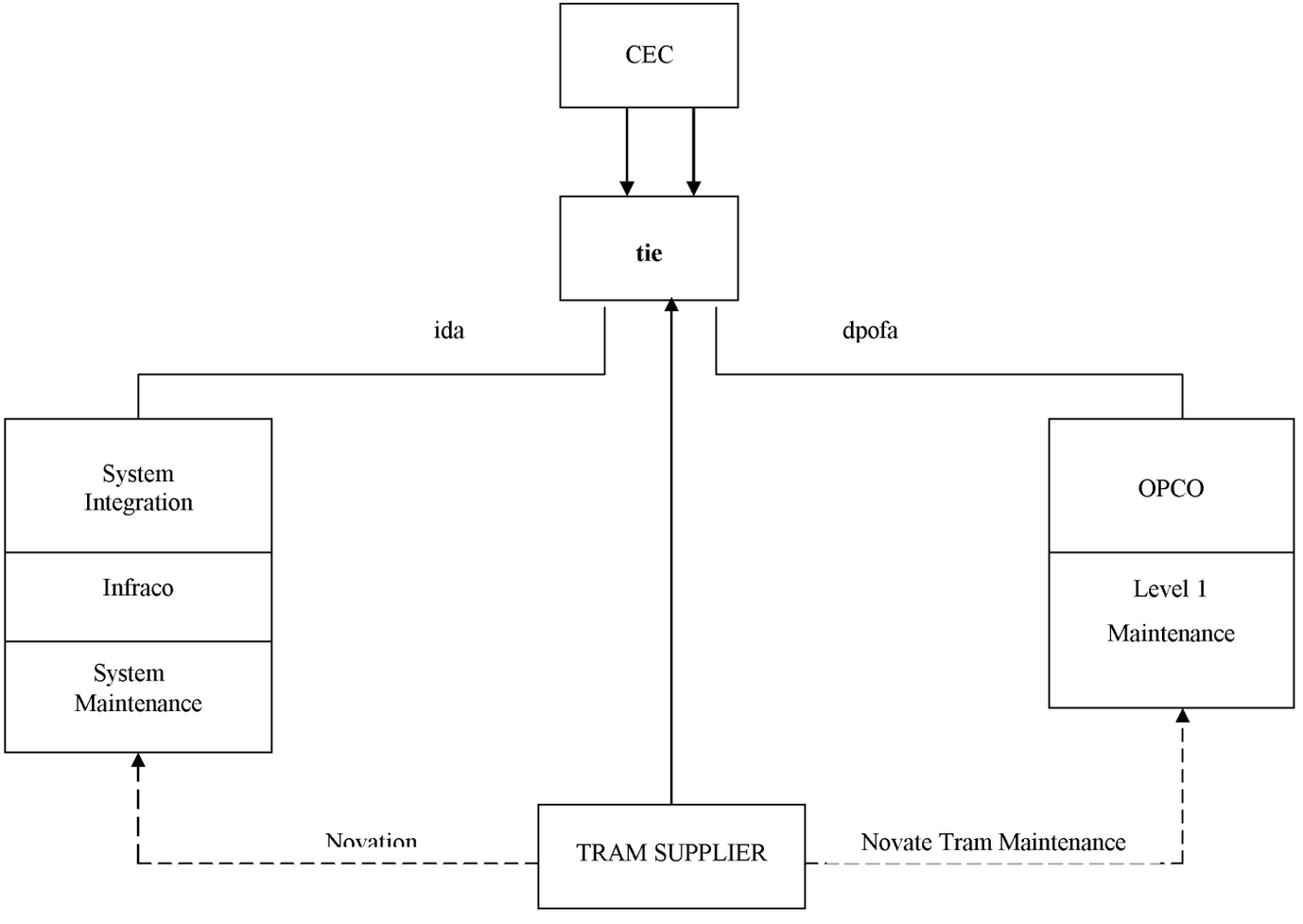
		Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
27	Cost of procurement (bidders)	4=	2=	2=	6	4=	1

APPENDIX II

OPTION 1 - CONSORTIUM OPTION

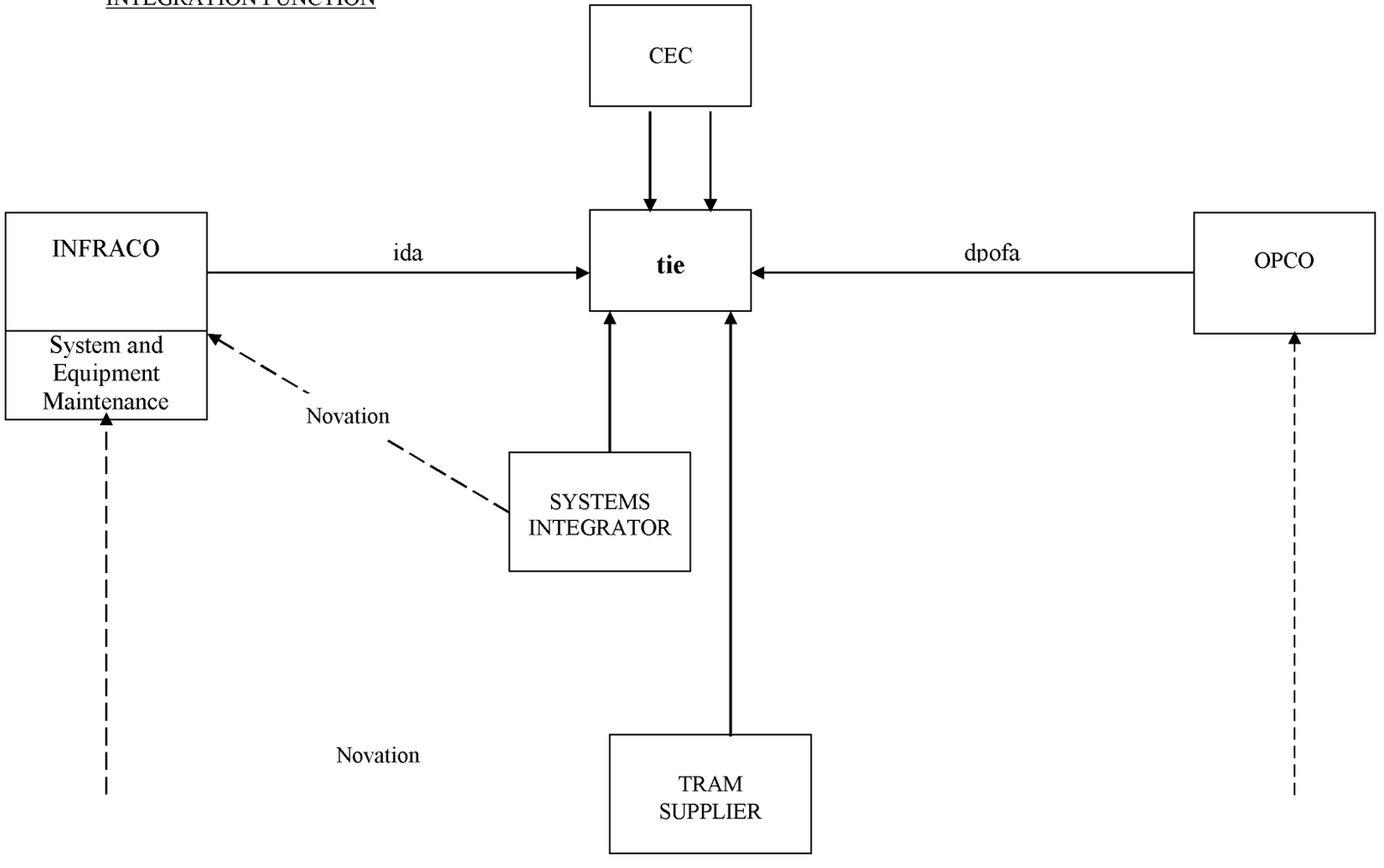


OPTION 2 - SEPARATE VEHICLE PROCUREMENT

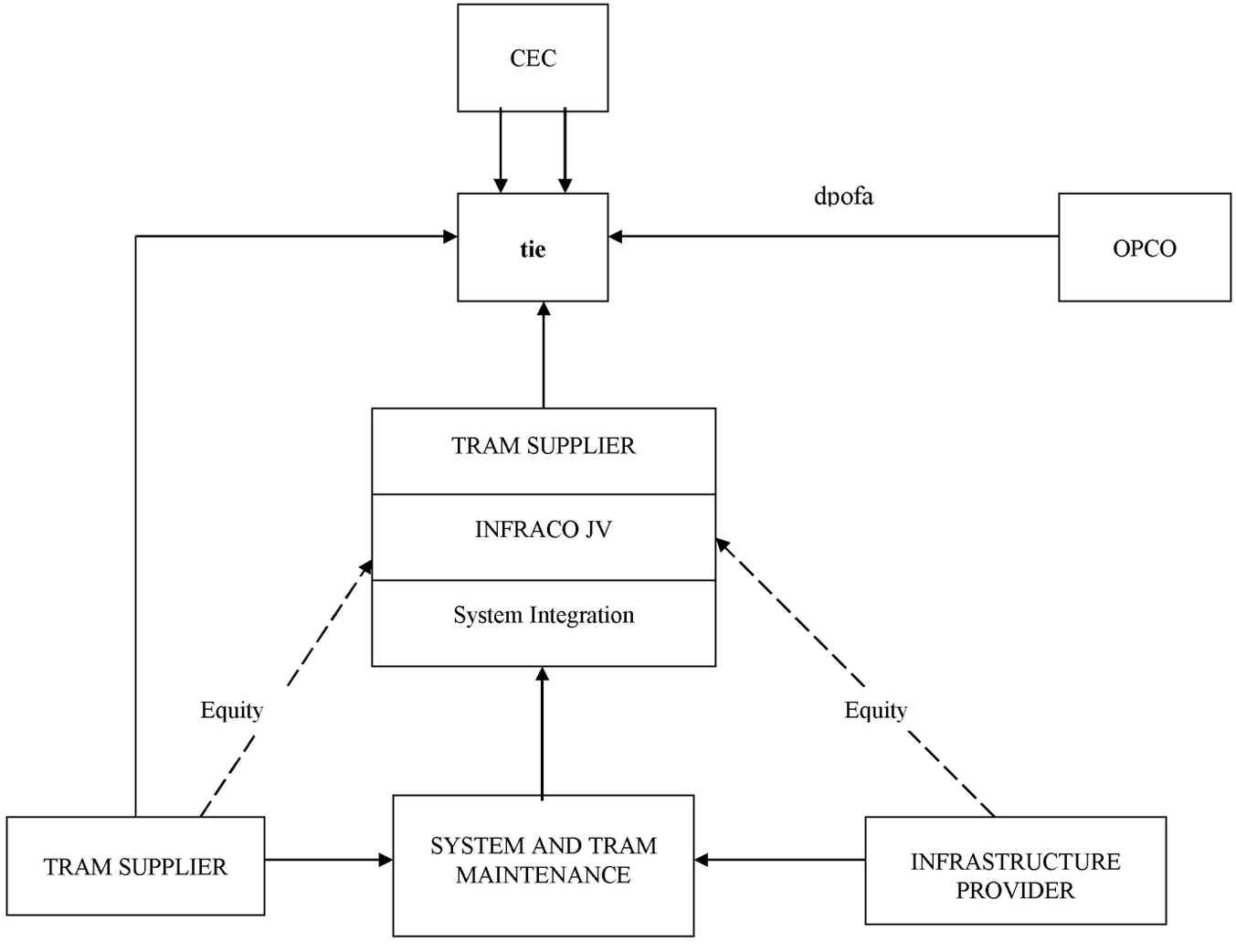


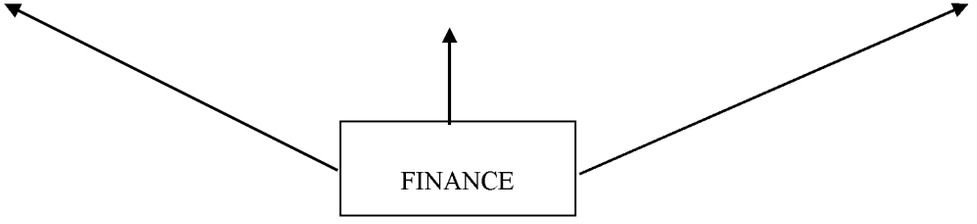
OPTION 3 - DISTINCT SYSTEM

INTEGRATION FUNCTION

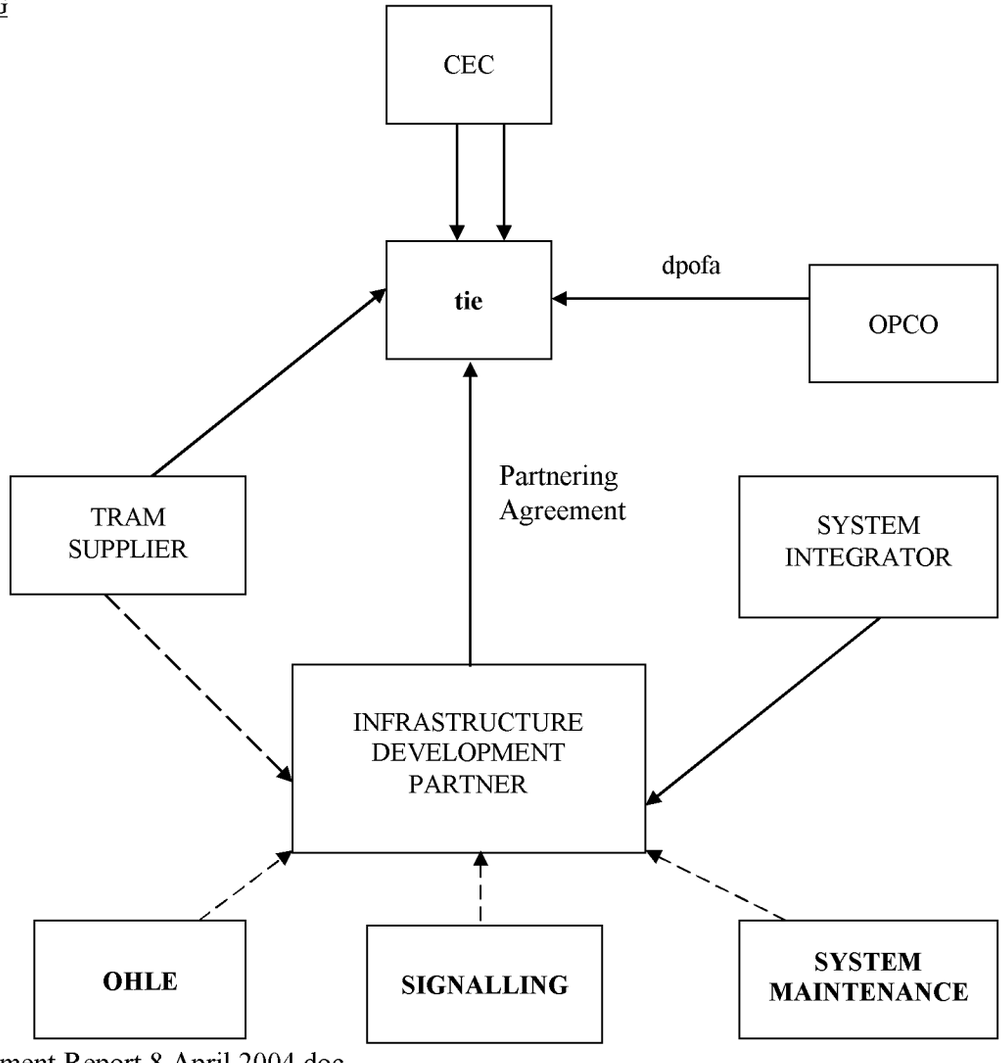


OPTION 4


CEC
dpofa
tie
OPCO
TRAM SUPPLIER
INFRACO JV
System Integration
Equity
Equity
TRAM SUPPLIER
SYSTEM AND TRAM MAINTENANCE
INFRASTRUCTURE PROVIDER



OPTION 5 - PARTNERING



OPTION 6 - PUBLIC WORKS PROCUREMENT