Implementation of Data Alignment Measures for the Alignment of Planning, Lands and Public Works Data

Final Report (Volume 3A)
Draft Policy Documents

March 2004

Amendment History

Change Number	Revision Description	Pages Affected on Respective Version	Revision/ Version Number	Date	Approval Reference
0	Initial Release		1.0	4 Mar 2004	

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1 Introduction

1.1 Review of ETWB (Works) and HPLB Technical Circulars

1.1.1 As of 29 January 2003 (ETWB TCW 1/2003), there were in effect about 330 Technical Circulars (TC) at ETWB level (including PWD, Works Branch, LWB and WB Technical Circulars and ETWB (Works) Technical Circulars). There were also in effect 13 HPLB technical circulars.

1.1.2 TCs are grouped into 17 index groups (the index groups as per ETWB TC(W)), among which there is no index group explicitly for the PLW data. The TCs that could be relevant to the exchange of PLW data fall within 2 categories:

(a) Land/ Planning/ Survey/ Environment (Group 12);

(b) Computer (Group 17).

1.1.3 There are some policy gap areas that need to be filled by complementary policies to be promulgated, either through revisions to the current TCs in effect, or issue of new TC would be recommended. This volume of the Final Report presents the drafted or revised technical documents.

1.1.4 The TCs that DAM implementations would potentially have an impact on, are listed in Table 1:

		Comment
19/96	Administration of Digital Geographical Data (PELBTC 2/96)	Should be replaced with a new TC /practice note to include Metadata Cataloge System. (Please refer to Volume 2H)
20/96	Documentation for Digital Geographical Data (PELBTC No. 3/96)	Should be replaced with a new TC/practice note to include Metadata Cataloge System.(Please refer to Volume 2H)
HPLB TC Ref No.		
2/96	Administration of Digital Geographical Data (WBTC 19/96)	Should be replaced with a new TC/practice note to include Metadata Cataloge System. .(Please refer to Volume 2H)
3/96	Documentation for Digital Geographical Data (WBTC No. 20/96)	Should be replaced with a new TC/practice note to include Metadata Cataloge System. .(Please refer to Volume 2H)

Table 1 - List of Technical Circulars related to DAM

1.1.5 There is a need to replace the above TCs with new TC/practice note to include the following on implementation of DAM :

(a) Metadata of selected CSU and Metadata Catalogue System (MCS)

(b) Administration of the MCS

(c) Modes of submission and retrieval of metadata

1.1.6 There is requirement from PDs who asked to improve the current mode of submission of proposal drawings and as-built drawings with respect to its timeliness and how CSWP could be adopted to streamline the process. Such procedure change could be promulgated through revision made to TC 16/2000, proposed as in Table 2.

		Comment
16/2000	Provision and Collation of Land Survey and Mapping Data	Section 5 of the TC should be revised to enforce timeliness and currency. To facilitate the updating of the proposed information required for both the Building and Road Centreline CSUs, it is recommended: "works departments should pass all proposal plans and as-built plans to SMO for updating the relevant maps and records. Proposal plans of works projects should be passed to SMO at finalisation of preliminary design, final design or at a time when requested by SMO whereas as built plans of works projects should be made available to LandsD within 6 months upon substantial completion of the works. Submission of proposal and as-built plans to SMO shall be made in digital form conforming to the CSWP promulgated in ETWB TC (W) 38/2002."

Table 2 – Technical Circular related to improve submission of proposal drawing and as- built drawing

1.2 New Technical Circulars for Complementary Policy

1.2.1 In parallel with the revisions, a new TC is recommended to promulgate the complementary policy for DAM purpose.

1.2.2 Table 3 summarizes the DAM 4 policy area and the stated objectives to be accomplished in each policy area (marked ✔). The policy needs to be promulgated through issue of new technical circulars unless revision to existing technical circulars could serve the purpose.

1.2.3 It is proposed that a new TC should be prepared to:

(a) Implement the complementary policy to align DAM with the e-Government Policy – road map for the migration from DAM to DAF and the efficiency productivity programme

(b) Implement a management framework to mandate the Provisional DAS Organisation Structure with the terms of reference, organization structure, membership, delegated authority and their responsibility.

Complementary Policy / **Objectives**	**e-Government Policy** **Road Map and its migration to DAF**	**e-Government Policy** **Efficiency Productivity Programme**	**Management Framework of DAM**
Set direction on how B/Ds should work together			
(a). Improve efficiency and effectiveness on exchange of PLW data	✔	✔	
(b). Synergise the investment already invested by PDs on GIS systems		✔	
(c) Align with similar initiatives of other B/D	✔		
(d) Provide continuity and a smooth transition from DAM to DAF	✔		
(e) Institutionalize the issue of CSU specification, requirements for the implementation of the DAM and alignment with e-Government Policy			✔

Table 3 Policy and Objectives

1.2.4 The DAM specification and the requirement and implementation details would be published in the practice notes and which would be released by the DAS Task Force. Also some of the relevant requirements for the implementation of DAM would be updated in the Project Administration handbook which would be discussed in section 1.3.

1.3 Review of Project Administration Handbook

1.3.1 Project Administration Handbook (PAH) is a project management manual for works departments of ETWB. There are eight Chapters in the PAH. They are:

(a) Chapter 1 Project Planning

(b) Chapter 2 Project Approval

(c) Chapter 3 Lands matters

(d) Chapter 4 Project Design and Estimate

(e) Chapter 5 Contract Documents

(f) Chapter 6 Tender Procedure

(g) Chapter 7 Contract Management

(h) Chapter 8 Maintenance and Minor Works

1.3.2 Although this PAH is not directly related to DAM, we would also like to take the opportunity to make recommendation on how the current mode of submission of proposal drawings and as built drawings could be improved to facilitate an efficient and timely update of PLW data which are in the same business domain of the CSU.

1.3.3 There are the following provisions in the PAH which lay out the procedure for submission of proposal and as-built drawings:

(a) Chapter 3 Lands matters – it is required from section 3.3.1 (b) and section 3.3.2 that preliminary project plan/project plan should be sent to DLO and from section 5.4.2 that as built records should be prepared and sent to LandsD.

(b) Chapter 7 Contract Management – there are similar provisions in section 18.3.6 of the PAH.

1.3.4 Notwithstanding the provisions now contained in the PAH (similar provisions also made in section 5 of ETWB (W) TC 16/2000), previous experience indicated that these as built records are not available in a timely manner and this makes updating of map record difficult. Table 4 below describes the present status on submission of as built records to LandsD.

Works Department	Present status: Preparation time prior to submission of as-built records to LandsD
ArchSD	Normally about 6 months on substantial completion of project.
CED	Normally about 9 months on substantial completion of project (not applicable to GEO).
DSD	As-built drawings (such as river channel) are not sent to LandsD under current practice. Normally it takes a long while before they are completed and available. DSD would follow the recommendation made in this document.
EMSD	EMSD has no particular comment on this issue as it is not applicable to their operations.
HyD	HyD considers that the as-built plans (of digital format if available) for the completed works could normally be made available to LandsD within the following period after certifying substantial completion of the project: - 3 to 6 months for minor in-house projects; - 6 to 9 months for major in-house projects; and - 6 to 12 months for consultant-managed projects. Notwithstanding the above, in order to facilitate timely updating of the basic survey sheets by Lands D, HyD has been trying its every endeavour since early 2003 to forward the as-built plans for individual constructed features under in-house projects to Lands D once they have been surveyed (even before the certification of substantial completion of the project).
TDD	TDD does not pass the as-built drawings directly to LandsD. The as-built drawings are passed to maintenance parties, e.g. HyD, DSD or WSD. These Works Departments will forward the as-built drawings to LandsD.
WSD	WSD has no record of providing as-built records to LandsD. WSD will prepare and submit the as-built records to LandsD, in case it happens, in accordance with the time as stated in the Project Administration Handbook.

Table 4 Submission of as-built records to LandsD

1.3.5 Given the current situations documented in Table 4, it is recommended that the timely submission should be encouraged and stipulated as a requirement. With better coordination among project participants in works projects delivery, it is anticipated that Works Departments could manage to send as-built records to LandsD within 6 months on substantial completion of the works projects. As such, section 5.4.2 and section 18.3.6 of the PAH needs to be revised accordingly.

1.3.6 It is recommended that details of the as-built records need to conform to a stipulated softcopy format in order to facilitate timely incorporation of information into each respective systems. This would help LandsD optimize the resources to digest, decompose, convert and check the incoming data, either in digital and paper format.

1.3.7 Also PDs should assist to provide the latest version of the proposal scheme when requested by the Survey and Mapping Office (SMO) of LandsD. Submission of proposal and as-built plans to SMO shall be made in digital form conforming to

the CSWP promulgated in ETWB TC (W) 38/2002. Sections 3.3.1(b), 3.3.2 and 5.3 of the PAH need to be revised accordingly.

1.3.8 For consistency, the above provisions in the PAH need to be updated accordingly.

1.4 Draft Policy Documents

Technical Circulars

1.4.1 A draft new circular covering the following is prepared and included in the Appendix A. This new circular will include:

(a) Announcement of the implementation of DAM

(b) Announcement of the establishment of the Provisional DAS Organisation Structure

1.4.2 Draft replacement/ revisions to the following circulars in Table 5 will also be prepared separately. A draft of the replacement of 16/2000 is included in Appendix B. TC 19/96 and 20/96 will be replaced with practice notes.

ETWB (WB) TC Ref No.	Subject	Comment
19/96	Administration of Digital Geographical Data (PELBTC 2/96)	Should be replaced with a new TC/practice note to include Metadata Catalogue System. (Please refer to Volume 2H)
20/96	Documentation for Digital Geographical Data (PELBTC No. 3/96)	Should be replaced with a new TC/practice note to include Metadata Catalogue System. .(Please refer to Volume 2H)
16/2000	Provision and Collation of Land Survey and Mapping Data	Section 5 of the TC should be revised to enforce timeliness and currency. To facilitate the updating of the proposed information required for both the Building and Road Centreline CSUs, it is recommended: "works departments should pass all proposal plans and as-built plans to SMO for updating the relevant maps and records. Proposal plans of works projects should be passed to SMO at finalisation of preliminary design, final design or at a time when requested by SMO whereas as

ETWB (WB) TC Ref No.	Subject	Comment
		built plans of works projects should be made available to LandsD within 6 months upon substantial completion of the works. Submission of proposal and as-built plans to SMO shall be made in digital form conforming to the CSWP promulgated in ETWB TC (W) 38/2002."
HPLB TC Ref No.		
2/96	Administration of Digital Geographical Data (WBTC 19/96)	Should be replaced with a new TC/practice note to include Metadata Catalogue System. .(Please refer to Volume 2H)
3/96	Documentation for Digital Geographical Data (WBTC No. 20/96)	Should be replaced with a new TC/practice note to include Metadata Catalogue System. (Please refer to Volume 2H)

Table 5 - List of Technical Circulars to be Reviewed

(a) Metadata of selected CSU and MCS

(b) Administration of the Metadata Catalogue System

(c) Modes of submission and retrieval of metadata

Draft amendment to PAH

1.4.3 Revisions to Chapter 3 and Chapter 7 of the PAH which are relevant to the exchange of PLW data will also be updated accordingly.

(a) Chapter 3 Lands matters – it is required from section 3.3.1 (b) and section 3.3.2 that preliminary project plan/project plan should be sent to DLO and from section 5.4.2 that as built records should be prepared and sent to LandsD.

(b) Chapter 7 Contract Management – there are similar provisions in section 18.3.6 (a) of the PAH.

1.4.4 Notwithstanding the provisions now contained in the PAH (similar provisions also made in section 5 of ETWB (W) TC 16/2000), previous experience indicated that these as built records are not available in a timely manner and this makes updating of map record difficult.

1.4.5 Draft revision to the PAH will be included in the Appendix C.

Complementary revised policy by Participating Departments

1.4.6 Each PD should also review their own Department Technical Circulars and amend their Technical Circulars accordingly for the implementation of the DAM.

1.4.7 Develop Department IT Plan

(a) The Department IT Plan should include a review on how the existing GIS System should be revamped to address efficiency and effectiveness in data management for all of its various applications/ systems.

(b) Also, to achieve better cost-effectiveness in IT and GIS implementation, systems consolidation and collaboration within department should not be ignored and should be addressed in the Department IT Plan.

Appendix A – Draft Technical Circular

Ref: WB(CS) x/x/x

GOVERNMENT SECRETARIAT
PLANNING, ENVIRONMENT AND
LANDS BRANCH, &
WORKS BRANCH
MURRAY BUILDING
GARDEN ROAD
HONG KONG

xx 2004

Housing, Planning and Lands Bureau Technical Circular No. xx /xx

Environment, Transport and Works Bureau Technical Circular No. xx/xx

Data Alignment Strategy for the exchange of planning, lands and public works data

Scope

1. This Circular announces the implementation of the Data Alignment Strategy and the associated Data Alignment Measures (DAM) for the exchange of planning, lands and works data.

Effective Date

2. This Circular shall take effect on <<date to be determined>>.

Effect on Existing Circulars

3. This Circular shall be read with ETWB Technical Circular (Works) No. 38/2002 and xx/2004 << replacement of 16/2000>>.

Definitions

4. "*DAS*" shall mean Data Alignment Strategy which is an initiative of HPLB to improve the efficiency and effectiveness in the exchange of planning, lands and works (PLW) data. It comprises two components: DAM and DAF.

5. *"DAM"* and *"DAF"* shall mean Data Alignment Measures and Data Alignment Framework respectively. While DAM refers to the short term measures which are implementable within a reasonable short timeframe, DAF refers to the long term solution for the exchange of PLW data. These two components form the DAS.

6. "*Planning, Lands and Public Works Data*" or "PLW Data" shall mean the geospatial data currently exchanged among the participating departments for planning, lands and works purposes. These data include, but not limited to, the data generated from the GIS system or from CAD system, for drawings, spatial analysis and other applications relating to buildings, developments, lands, land administration, planning and works projects.

7. "*CSWP*" shall mean the CAD Standards for Works Projects promulgated in ETWB TC(Works) 38/2002. All CAD exclusive data shall be CSWP compliant.

8. Participating Bureaux include HPLB and ETWB, whose roles are to implement joint e-Government initiatives with departments to improve effectiveness and efficiency. CITB is also a policy bureaux participating in this DAM initiative and their role is to align e-Government initiatives among B/Ds at HKSAR central government level.

9. The participating departments include:

(a) ArchSD, CED, DSD, EMSD, HyD, TDD and WSD of ETWB; BD, LandsD, LR and PlanD of HPLB; C&SD, RVD of FSTB. They represent major stakeholders in the exchange of PLW data in the DAM initiative.

(b) ITSD is also a participating department. They are the technical advisor overseeing the standard compliance in this DAM initiative.

Background

10. To conform to the overall e-Government policy, HPLB undertakes to implement a Data Alignment Strategy (DAS) which is complementary to the "2001 Digital 21 Strategy – Hong Kong: Connecting the World" promulgated in May 2001 by the Government of the Hong Kong Special Administrative Region. In this DAS Strategy, participating bureaux / departments (B/Ds) should collaborate to work together and demonstrate that they can lead by example to improve efficiency and effectiveness in the context of planning, lands and works (PLW) data exchange.

11. ETWB and HPLB departments, also C&SD and RVD of FSTB are major producers and users of planning, lands and public works data (PLW data). PLW data includes digital geographic data. Also they include CAD data and textual data which could be in digital or in hard copy format.

12. In recent years, significant progress has been made in the participating departments in employing GIS in capturing, updating and analyzing geographic data. Some departments already owned several GISs and many more GISs are at different stages of development. Despite the investments made on the GISs, there are data exchange processes which still have room to improve in terms of efficiency and effectiveness. The improvements are required to address

deficiency arising from: data definition, data in digital format, compatibility of data format, data quality, data cost and turn around time.

13. As part of the DAS Strategy, short term Data Alignment Measures (DAM) are to be in place to improve the data exchange processes and if proved successful on implementation of the DAM, plans will be formulated to migrate from DAM to Data Alignment Framework (DAF). The evaluation of the DAM will be carried out in the Situation Analysis Review (SAR) at a scheduled time to be agreed with the participating departments.

Policy

14. DAM aims at aligning the PLW data, setting technical standards, requirements for licensing and data custodianship for data exchange and provisions of metadata catalogue service of metadata. All PDs are obliged to complete all preparatory tasks and to comply with the standards in the data exchange. Implementation and technical details of the standards will be prepared and promulgated in Practice Note (PN). These include:

(c) Specification and Explanatory Notes of Building CSU

(d) Specification and Explanatory Notes of Lot CSU

(e) Specification and Explanatory Notes of Slope CSU

(f) Specification and Explanatory Notes of Road Centerline CSU

(g) Specification and Explanatory Notes of TPU/SB CSU

(h) Data Custodianship and License Agreement

(i) Inventory of GIS Maps

(j) Maintenance of File Format Standard

(k) Maintenance of Metadata, and

(l) Other details to be developed in later stage on implementation of DAM

15. Since DAM would involve different participating B/Ds from different jurisdictions, alignment of business agenda among B/Ds is crucial to the success of DAS. It will need a strong and well represented, efficient and effective management framework to promulgate complementary policies for the implementation of DAM and DAS.

16. The Management Framework shall include a Provisional DAS Organisation Structure which comprises DAS Task Force and DAM Management Committee. The former is responsible for the steering of the DAM initiative and its later

migration to DAF whereas as the latter is responsible for the daily administration and issues arising from the compliance and maintenance of the standards, extending the DAM initiative to include more government departments and alignment of similar initiatives with other B/Ds.

17. The mandate of the Provisional DAS Organisation Structure is not project oriented, but it is a structure affiliated with participating B/Ds, who share the vision and align with the policy stipulated in this circular.

18. One objective of the policy is to institutionalize the releases of the latest update of a series of Practice Note promulgating the requirements with respect to the implementation and subsequence maintenance of common spatial units (CSU), accountability for care and maintenance, custodianship principle, mechanism (including processes and procedures) for maintenance of CSUs, maintenance of GIS map inventory, file format standard and metadata.

19. When required, other policies will be promulgated to set the direction on how B/Ds should work together and to accomplish the following objectives:

(a) Roadmap of DAM and its migration to DAF

- Foster the long term partnering arrangement among participating departments (PDs) who are committed to ensure that they lead by example to improve efficiency and effectiveness on exchange of PLW data.
- Align similar initiatives of among B/Ds. DAM includes measures good for exchange of CSU and non CSU data. There are other provisions in CAD Standard for Works Projects (CSWP) and Interoperability Framework (IF) which are useful for exchange of non CSU data. The subsequent maintenance of DAM, CSWP and IF should be well coordinated such that the overall infrastructure is complementary and the set standards align with each other, where applicable and practical, and overlapping initiatives should be avoided.
- Provide continuity and a smooth transition from DAM to DAF. The policy should set a common vision that could be shared by all PDs and the DAM would migrate to DAF in terms of:
  - Increased number of participating departments,
  - More CSUs defined to meet the common business needs of the PDs
  - More standards developed or when applicable, leverage on the standards already built in other initiatives, e.g. CSWP and IF and contribute to the common data standard at HKSAR government level
  - A better integrated infrastructure which could be shared for data storage and dissemination of metadata and business aligned PLW data (available in standard file format standards), query and analysis

(b) Efficiency Productivity Programme

- Encourage PDs to identify areas good for business process reengineering in the context of DAM. PDs should be encouraged and possibly with assistance from an agency who could provide expertise and advice on how reengineering could be accomplished. Experienced colleagues having related knowledge in the business domain are good candidates to take up this role.
- Encourage B/Ds to synergise the investment already invested or to be invested by PDs on GIS systems and improve sharing of experience and knowledge in GIS technology. These GIS initiatives of the PDs could have been better coordinated from business perspective. Well-coordinated investment among PDs could help synergise the investment already invested by PDs on GIS systems and improve sharing of experience and knowledge in GIS technology. Overlapping initiatives could be minimized.

20. Details about the structure are documented in Appendix A of this circular.

(xxxxx)

Secretary for Housing, Planning and Lands

(xxx)

Secretary for Environment, Transport and Works

Appendix A of Drafted Technical Circular

Provisional DAS Organisation Structure

A.1 Organisation, Roles and Responsibilities

A.1.1 A Provisional DAS Organisation Structure shall be mandated to oversee the implementation of DAM, the Situation Analysis Review (SAR) and later implementation of DAF.

A.1.2 A two-tiers organisation structure, similar to the current two-tiers structure overseeing the DAM project, is recommended. The mandate of the Provisional DAS Organisation Structure is not project oriented, but it is a structure affiliated with participating B/Ds who, sharing the vision and aligning with the policy, work together to accomplish the following objectives:

(a) Implement the road map and the efficiency productivity programme;

(b) Institutionalise requirements and specification for the implementation of DAM

A.1.3 The structure comprises:

(a) DAS Task Force

(b) DAM Management Committee

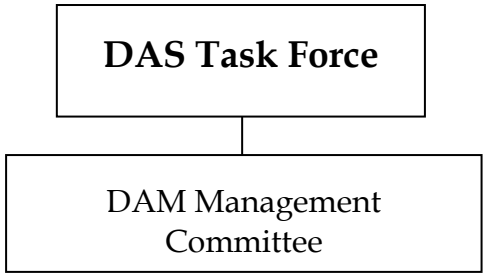

Figure 1 Provisional DAS Organisation Structure

A.1.4 Despite the fact that DAM was initiated by HPLB, there is an opportunity that DAM would be extended to include other non PDs in the future. The steering role could be better coordinated at joint Bureau level.

A.1.5 In addition to the regular memberships, it is recommended to appoint two co-op advisors to sit in the DAS Task Force and the DAM Management Committee:

(a) GIS Advisor/Coordinator - He/she will offer professional advice on issues related to geospatial data exchange and sharing and is essential to support the proper functioning of the proposed structure. He/ she could

offer an independent view on how the GIS initiatives of the PDs could be synergised, but without compromising the level of service of each PD. Currently, PDs have been asking precious government resources for implementation of GIS separately. These GIS initiatives of the PDs, usually involve significant amount of money, could have been better coordinated from business perspective if a central advisor or coordinator with the necessary insight and expertise was in the Government's administrative level. Well-coordinated investment among PDs could help synergise the investment already invested by PDs on GIS systems and improve sharing of information. This GIS Advisor/Coordinator's expertise and involvement is indispensable to help identifying collaboration opportunity, to provide insight, necessary elaboration and suggestion on proper direction to the DAS Task Force. The GIS Advisor/Coordinator is also crucial to help identifying possible duplication of investment and duplication of effort whereby help improving the overall cost-effectiveness of GIS implementations in the Government.

(b) BPR Advisor - There are identified areas good for inter-departmental business process re-engineering which can be taken up in joint collaboration among PDs. More improvement areas could be identified and such initiatives should be encouraged. Colleagues having relevant experience from EU are good candidates to taking up this role. He/she could provide expertise and advice on how reengineering could be accomplished.

A.1.6 The structure and its membership will be discussed in the following sections.

DAS Task Force

A.1.7 The main tasks of members of the DAS task Force are summarized below by the roles they play in the DAS Task Force:

(a) Executive (Chairman) - The main tasks are to:

(i) Represent the overall interests of the business;

(ii) Organize and chair the DAS Task Force meetings;

(iii) Lead and resolve differences among PDs in the implementation of policy and DAM;

(iv) Ensure individuals are appointed to respective roles in the Organization structure, including the co-op membership of GIS Advisor and BPR Advisor;

(v) When supported with justifications, approve new complementary project items that are required for the implementation and maintenance of DAM and onward migration to DAF. The project items could be taken up by in-house staff or outsourced to a professional service provider;

(vi) Signify acceptance of deliverables upon the completion of the milestone of the respective complementary project items;

(vii) Monitor Situation Analysis Review

(b) Senior User - The main tasks are to:-

(i) Represent the interests of the PDs;

(ii) Consider and agree activities and products which will directly affect the users;

(iii) Align user resources;

(iv) Resolve conflicts concerning users' requirements and/or their priorities; and

(v) Ensure that the respective members of the DAM Management Committee are properly briefed to deal with day-to-day matters.

(c) Senior Technical - The main tasks are to:-

(i) Consider the technical implications of the recommendation from the deliverables of DAM;

(ii) Consider and agree product descriptions and specifications of technical products;

(iii) Assign technical resources needed by the DAS;

(iv) Resolve conflicts concerning technical requirements and their priorities; and

(v) Ensure that the Technical Assurance Coordinator of the DAM Management Committee is properly briefed to deal with day-to-day matters.

(d) GIS Advisor – The main tasks are to answer Task Force enquires on the recommendations made by the DAM management Committee on:

(i) how to improve the coordination of implementation of department GIS projects among the PDs and to advise on how the

technology should be managed from the overall B/Ds' perspective for migration from DAM to DAF.

(ii) how to synergise the investment already invested or to be invested by PDs on GIS systems and update Task Force members on the appropriate GIS technology for PDs' application.

(iii) Providing help, insight, necessary elaboration and suggestion on proper direction to the DAS Task Force. GIS expertise is indispensable to help identifying collaboration opportunity.

(iv) Providing the overall GIS direction in the government and facilitate the proper functioning of the DAS Task Force and DAM Management Committee."

(v) Addressing important issues and steering towards appropriate direction with long term impact to the whole government. This is a key to success of future implementation and the continued improvement within the government on geospatial information sharing and exchange.

(e) Business Process Reengineering Advisor – The main task is to:

(i) Advise Task Force members on how the cross departments BPR initiatives put forward by the PDs should be prioritized and implemented.

(ii) Align resources to offer advice and go through the process review with respective PDs

A.1.8 The respective compositions and terms of reference are listed in Table 1 below:-

DAS Task Force (Equivalent status as that of the Task Force of the DAM project)	
Executive (Chairman)	A senior directorate officer of the bureau leading the DAS Strategy (leading bureau)
Senior Users	Representatives at directorate level from CITB, ETWB, HPLB and participating departments.
Senior Technical	Chief Systems Manager, ITSD
GIS Advisor (co-op member)	An appointed independent GIS technology advisor
Business Process Reengineering Advisor (co-op member)	An appointed managing consultant having the business domain knowledge to sit in the Task Force
Secretary	To be provided by the leading bureau

DAS Task Force (Equivalent status as that of the Task Force of the DAM project)	
Terms of Reference	**Policy** • To oversee the execution of the road map and the efficiency productivity programme and align DAM with the "2001 Digital 21 Strategy" • To foster and support new initiatives on Efficiency Productivity Programme • To oversee overall management of DAM implementation and onward migration to DAF. • To oversee the implementation of the DAS. • To ensure that the implementation of DAM and the migration towards DAF implementation remains on course and to deliver products of the required quality and take appropriate corrective actions as required. • To endorse recommendation from DAM Management Committee and to institutionalize the requirements and specifications necessary for the implementation of DAM through issue of practice notes. **DAM** • To select competent team members, either in-house staff or outsourced consultant, to carry necessary tasks and to approve major deliverables by the team, such as development of new CSUs, etc. • To delegate the day-to-day management and the assurance work to suitable members as appropriate. • Coordinate and apportion responsibilities for the implementation of the DAS (i.e. DAM and DAF). • Monitor the feedback from users of the DAM.

Table 1 DAS Task Force structure ***and terms of reference***

DAM Management Committee

A.1.9 The main tasks of members of DAM Management Committee are summarized below by the roles they play in the Committee:

(a) Executive (Chairman) - The main tasks are to:

(i) Lead and resolve differences among PDs in the implementation of policy, coordination of joint B/Ds initiatives, and implementation of DAM.

(ii) Report to the DAS Task Force on the present status, work plan and issues arising from the execution of the road map, efficiency productivity programme and implementation of the CSUs and

department symbology specification and implementation of file formats standards;

(iii) Overall administration of the implementation of the specification of CSU and symbology and implementation of file formats standards;

(iv) Chair DAM Management Committee meetings including Checkpoint Meetings; and

(v) Promote DAS to include other non PDs in the overall implementation.

(b) User Assurance Coordinator (UAC) - The main tasks are to:-

(i) Represent the Senior Users (of the DAS Task Force) in taking care of user interests and activities;

(ii) Monitor and report to the Senior User any user related problems that arise on implementation of DAM;

(iii) Ensure that the users' requirements are properly addressed throughout the implementation of DAM;

(iv) Manage complementary project items as per directive from DAS Task Force;

(v) Attend DAM Management Committee Meetings including Checkpoint Meetings, when required;

(vi) Monitor all exceptions and assist in the impact analysis on user related areas.

(c) Technical Assurance Coordinator (TAC) - Technical Assurance Coordinator will be the contact point for IT logistic support, coordinate the internal technical teams for comments on the technical deliverables from any complementary project items approved by the DAS Task Force . The main tasks of the Technical Assurance Coordinator are to:-

(i) Select the appropriate technical strategy and methods;

(ii) Advise the application of technical standards;

(iii) Advise the quality criteria and attendees for reviews of technical products;

(iv) Monitor the progress of technical issues against the plan and remedy the situation in case of any major deviations;

(v) Attend DAM Management Committee Meetings including Checkpoint Meetings.

(d) GIS Advisor

(i) Advise DAM Management Committee on how to improve the coordination of implementation of department GIS projects among the PDs and to advise on the appropriate technology for migration from DAM to DAF.

(ii) Advise DAM Management Committee on how to synergise the investment already invested or to be invested by PDs on GIS systems and improve sharing of resources, experience and knowledge in GIS technology.

(iii) Providing help, insight, necessary elaboration and suggestion on proper direction to the DAS Task Force. GIS expertise is indispensable to help identifying collaboration opportunity.

(iv) Providing the overall GIS direction in the government and facilitate the proper functioning of the DAS Task Force and DAM Management Committee."

(v) Addressing important issues and steering towards appropriate direction with long term impact to the whole government. This is a key to success of future implementation and the continued improvement within the government on geospatial information sharing and exchange.

(e) Business Process Reengineering Advisor - Advise DAM Management Committee on how the cross departments BPR initiatives put forward by the PDs should be prioritized and implemented.

A.1.10 There could be ad hoc working groups or sub working groups under the DAM Management Committee. With the example of CSU sub working group, Figure 2 below, illustrates the general organizational structure:

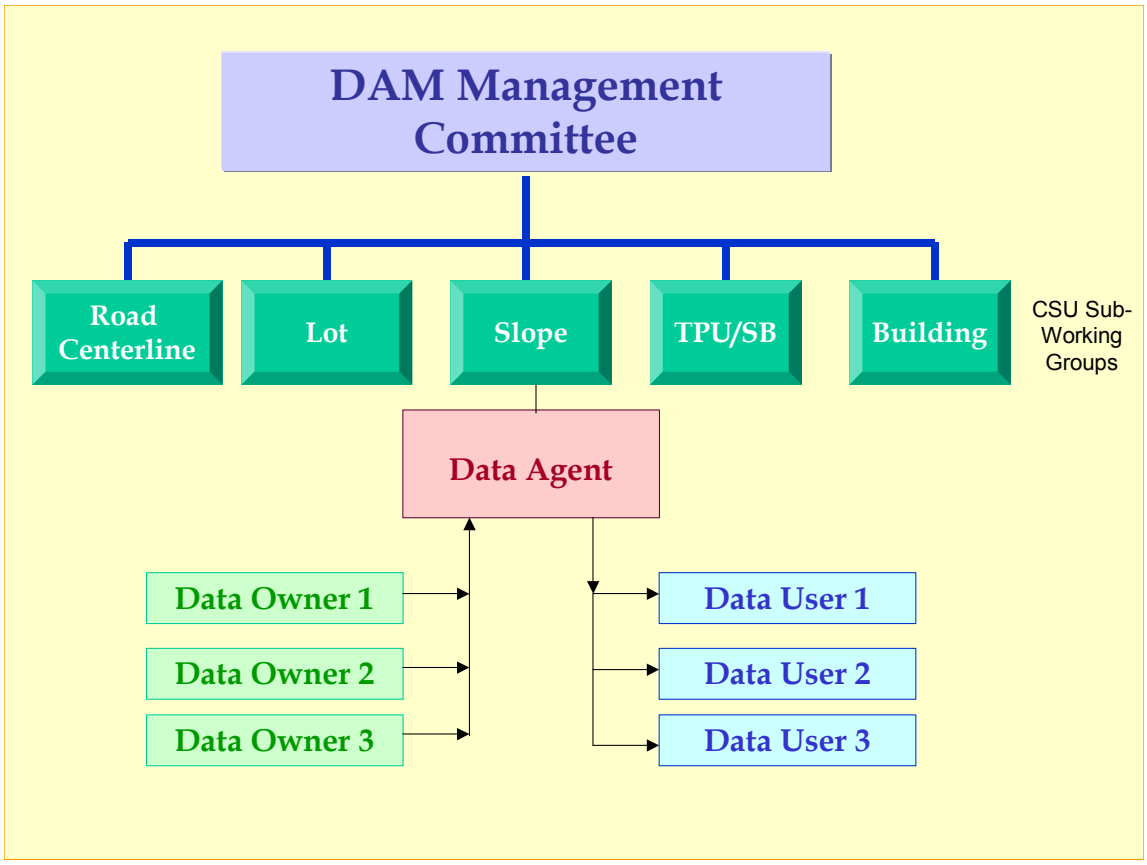

Figure 2 DAM Management Committee structure (using Slope CSU as an example for illustration)

A.1.11 The respective compositions and terms of reference are listed as in Table 2 below:-

DAM Management Committee (equivalent status as that of Working Group of the DAM Project)	
Chairman	A directorate officer of the bureau leading the DAS Strategy (leading bureau)
User Assurance Coordinator	Representatives at senior professional level from CITB, ETWB, HPLB and participating departments
Technical Assurance Coordinator	System Manager, ITSD
GIS Advisor (co-op member)	An appointed independent GIS technology advisor
Business Process Reengineering Advisor (co-op member)	An appointed managing consultant having the business domain knowledge to sit in the DAM Management Committee
Secretary	To be provided by the leading bureau
Terms of Reference	**General** • To be responsible to DAS Task Force for the duties delegated. • To assist DAS Task Force in overseeing on a day-to-day basis the management of the overall

	implementation. • To oversee the management of the complementary project items approved by the DAS Task Force. • To implement necessary complementary measures for the implementation of the DAS Strategy. • To provide feedback from departmental users on the suitability of the DAM to the DAS Task Force. • To recommend the DAM deliverables to the DAS Task Force for endorsement. **Policy** • To implement the policy steered by the DAS Task Force. • To coordinate joint initiatives from B/Ds to identify areas good for business process re-engineering in the exchange of PLW data • To promote DAS Strategy to other government departments and improve the alignment to cover a larger jurisdiction areas and business domains in the context of CSUs. • To align with similar initiatives of other B/Ds. **DAM** • To maintain the DAM specification and recommend changes/update to Task Force for approval and promulgation through issue of practice notes. • To enforce CSU custodianship, the mechanism on maintenance of CSU, symbol specification, file formats standards and metadata management. • To take on ad hoc tasks including those assigned by the DAS Task Force. • To oversee the program of adoption. • To oversee the operation and management of the sub-working group. • To review and endorse recommendation made by sub-working Group. • To advise PDs on the appropriate technology and standards for DAM. • To interface with other technology initiatives of the government (e.g. IF). • To advise or coordinate B/Ds on the coordination of GIS implementations of the PDs, organize technical seminars etc. • To take on ad hoc tasks including those assigned by the DAS Task Force.

Table 2DAM Management Committee - structure and terms of reference

A.1.12 The GIS Advisor/Coordinator shall be a qualified personnel who is perceived to be neutral from GIS vendors' products and is an expert in GIS technology with practical experience in GIS implementation and project management. He/she should preferably come from Bureau or be seconded to Bureau from PDs. Highly regarded and renowned GIS professional personnel from the industry who are not affiliated with any particular GIS software vendors or products can also be considered to taking up this role. Given the need of independence and objectivity, the former arrangement is more suitable.

A.1.13 It is recommended that a managing consultant having appropriate business domain knowledge should be appointed to sit in the DAS Task Force and DAM Management Committee as a co-op member. Colleagues from EU having the relevant experience are good candidates to take up this role. He/she will advise on how the cross-departments BPR initiatives should be prioritized and assist to offer expertise advise on how the institutional barriers should be addressed to improve efficiency and effectiveness.

A.1.14 To facilitate the joint B/Ds coordination and implementation of the CSUs, it was recommended to form ad-hoc sub-working groups or sub-working groups, e.g. CSU sub-working groups, each of which would be represented by the responsible personnel nominated by the PDs or agreed by the DAM Management Committee, who is seen to be impartial to all PDs in the sub-working Group.

A.1.15 The mandate of CSU sub-working group is to make recommendation on issues relating to the maintenance of CSUs for the DAM Management Committee approval. The PDs' participation on each sub-working group is proposed below:

					TPU/SB
BD	✔	✔		✔	
C&SD		✔			✔
LandsD	✔	✔	✔	✔	✔
LR[1]	NA	NA	NA	✔	NA
PlanD		✔		✔	✔
RVD		✔		✔	

[1] LR confirmed that the CSU would have no direct use to their business, but they would like to be kept informed about the progress of DAMs

					TPU/SB
ArchSD	✔	✔			
CED	✔		✔	✔	
DSD	✔			✔	
EMSD			Recommended		
HyD	✔		✔		
TDD					✔
WSD	✔				

Table 3 Sub-working group compositions

A.1.16 Although EMSD is not currently in the sub-working groups of the selected CSUs, it is recommended that they should participate in the appropriate sub-working groups on implementation of DAM 1 since the content of the CSU would be of interest to them.

A.1.17 Other issues on symbology specification, file formats standard, metadata and relevant policy issues could also be resolved in each CSU sub-working group.

A.1.18 Membership of ad-hoc sub-working groups could vary by their terms of reference and mandate to be agreed by the Chairman of the DAM Management Committee.

A.1.19 To cover different technology areas and to facilitate coordination of B/Ds GIS projects, it was recommended to form ad-hoc sub-working groups or sub-working groups, e.g. GIS department projects coordination sub-working group. Each of these sub-working groups would be represented by the responsible personnel nominated by the PDs or agreed by the DAM Management Committee.

A.1.20 The responsibilities of the GIS department projects coordination sub-working group are to:-

(a) Advise /coordinate GIS implementations of the PDs;

(b) Advise PDs on the appropriate technology for the implementation of new GIS and revamping of their existing GIS system;

(c) Leverage the existing investment already put on GIS by various PDs for shared use by other B/Ds. Encourage PDs to make use of the resources now available with DAM;

(d) Advise the way forward to DAF;

(e) Act on behalf of the DAS and interface with similar initiatives of other B/Ds, e.g. IF;

(f) Organize GIS technology seminars.

Appendix B - Revision to ETWB Technical Circular 16/2000

Ref : ETWB(W) xx/xx/xxx

Group : 12

xx xxxx 2004

Environment, Transport and Works Bureau

Technical Circular (Works) No. xx/2004

Provision and Collation of Land Survey and Mapping Data

Scope

This Circular stipulates the obligation of the works departments to provide all proposal plans and as-built plans in digital form of their projects to the Survey and Mapping Office (SMO) of the Lands Department (Lands D) for updating topographic maps, Computerized Land Informatin System (CLIS) and Common Spatial Units (CSUs) under the Data Alignment Measures (DAM). It also spells out the arrangement for the supply of digital map data by SMO to consultants working for government departments.

Effective Date

2. This Circular shall take effect on << to be decided>>.

Effect on Existing Circulars

3. This Circular supersedes WBTC No. 33/92 and WBTC No. 16/2000 which are hereby cancelled.

4. This Circular shall be read in conjunction with ETWB TC (W) No. 38/2000.

Introduction

5. SMO is the central authority for land survey and mapping in Hong Kong. It is responsible for the maintenance of the geodetic network, continuously updating large scale basic maps, photogrammetric survey, land boundary (cadastral) survey, geospatial information gathering and dissemination, the provision of cartographic and reprographic services and other land survey and GIS services for the community. The survey, mapping and geospatial information provided by SMO is important in supporting numerous social and economical activities in Hong Kong including but not limited to infrastructure developments and engineering projects.

Exchange of Land Survey, Mapping and Geospatial Information

6. In order that maximum and effective use shall be made of survey and mapping information, works departments should pass all proposal plans and as-built plans to SMO for updating the relevant maps and records. Proposal plans of works projects should be passed to SMO at finalisation of preliminary design, final design or at a time when requested by SMO whereas as built plans of works projects should be made available to LandsD within 6 months upon substantial completion of the works. Submission of proposal and as-built plans to SMO shall be made in digital form conforming to the CSWP promulgated in ETWB TC (W) 38/2002. Departments should also make copies of any other surveys available to SMO on request.

7. SMO aims to maintain an up-to-date topographic map database and mapping information and will advise any officer wishing to know the state of survey and mapping information in any particular area of Hong Kong. It is hoped that this procedure will lead to a better use of existing survey and mapping information and avoid duplication of effort among departments.

8. SMO (LandsD) is also the Data Agent of the Building CSU, Road Centreline CSU and Lot CSU under DAM. SMO will be responsible for collecting, integrating and dissemination of geospatial information related to these 3 CSUs on a regular basis

9. Departments can also check the mapping information on the web site of SMO at "www.info.gov.hk/landsd/mapping".

Survey Data on Land Boundary Matters

10. Works departments should maintain close liaison with SMO when undertaking engineering or building works. It is particularly important that they should ensure that there is no encroachment on private land, on allocated Government land or on Government land reserved or scheduled for future development. In this respect, SMO undertakes to provide sufficient data and guidelines for other government departments to follow or set out reference alignments or boundaries if situation warrants such actions.

Land Survey and Mapping Data Provided to Consultants

11. Arrangement has been made for Highways Department, Civil Engineering Department and Drainage Services Department to have a complete set of the digital map data and they will supply the digital map data direct to the consultants working for them under specific license conditions. Other departments intending to supply land survey and mapping data from SMO to their consultants, the department must give prior notice to SMO to ascertain whether the data within the project areas is available. SMO will then supply the required data to the department upon request.

(xxx)

Deputy Secretary (Works Policy)

Appendix C - Revision to Project Administration Handbook

Chapter 3

Section 3.3.1

Add:

Proposal plans of works projects should be passed to SMO at finalisation of preliminary design, final design or at a time when requested by SMO. Submission of proposal to SMO shall be made in digital form conforming to the CSWP promulgated in ETWB TC (W) 38/2002. Departments should also make copies of any other surveys available to SMO on request.

Section 5.4.2

Add:

As built plans of works projects should be made available to LandsD within 6 months upon substantial completion of the works. Submission of as-built plans to SMO shall be made in digital form conforming to the CSWP promulgated in ETWB TC (W) 38/2002. Departments should also make copies of any other surveys available to SMO on request

Chapter 7

Revision to Section 18. 3. 6 (a) Proposed Plan and As-constructed Survey

In addition to the guidelines given in WBTC xx/2004, the following should also be noted:

Civil Engineering Works

In order that maximum and effective use shall be made of survey and mapping information, works departments should pass all proposal plans and as-built plans to SMO for updating the relevant maps and records. Proposal plans of works projects should be passed to SMO at finalisation of preliminary design, final design or at a time when requested by SMO whereas as built plans of works projects should be made available to LandsD within 6 months upon substantial completion of the works. Submission of proposal and as-built plans to SMO shall be made in digital form conforming to the CSWP promulgated in ETWB TC (W) 38/2002. Departments should also make copies of any other surveys available to SMO on request.