IEC/TC100/TA10 (e-book, e-pulishing)の背景と主要活動
Background and major activities of IEC/TC100/TA10 (e-book, e-pulishing)

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1. はじめに

IECは，マルチメディア関連技術の標準化を担当する技術委員会としてTC100[1]を1995年に設立し，Multimedia systems and equipmentの国際標準化活動を行っている．その経緯は画像電子学会のVMA研究会の前身であるメディア統合技術研究会のMT5-S3-1[2]に報告されている．

各種文書の電子化に伴い，電子ブック(e-book)と呼ばれる出版形態に対する関心が高まり，関連技術の標準化への要求が高まってきた．そこでIEC/TC100は，e-book/e-publishingに関連する標準化への要求に応えるため，IEC/TC100の下位組織であるTA (Technical Area, ISO/TCなどにおけるSCに相当)の一つとして，2006年に新たにTA10[3]を設立して，その傘下のプロジェクトの活動を開始した．

そこで，本稿はTC100におけるTA10の設立の背景と経緯を示し，そこで行われている主な活動を概観する．

2. IEC/TC100/TA10

日本はe-book/e-publishingを扱う新TAの必要性を，IECのMultimediaを担当するSector boardに位置付けられるAGS(Advisory Group on Strategy)[4]での議論の中で各国に打診し，合意への背景作りを行ってきた．その活動の後，日本は新TAの設立提案[5]を2006年5月のTC100/AGM(Advisory Group on Management)に提出した．設立提案は承認され，TA10が，次に示す表題とスコープを掲げて活動を開始した．

(1) 表題(Title)

Multimedia e-publishing and e-book

(2) スコープ(Scope)

To develop International Standards for multimedia e-books, multimedia e-publishing, and the related technologies, including;

- formats of multimedia e-book contents,
- minimum requirements for multimedia e-book viewers,
- user interfaces for multimedia e-book viewers,
- e-publishing services, and
- guidelines for e-book distribution by interchangeable storage media.

(3) Officer

Technical Area Manager: Mr Y. Uemura
Technical Secretary: Dr M. Mukai

3. TA10設立の背景と経緯
3.1 背景

IEC/TC100では，2006年までに次のTAが活動を行っていた．

TA1 Terminals for audio, video and data services
TA2 Colour measurement and management

TA3 Infrared systems and applications（注：TA3は既にdisbandされている．）
TA4 Digital system interfaces and protocols
TA5 Cable networks for television signals, sound signals and interactive services
TA6 Higher data rate storage media, data structures and equipment
TA7 Moderate data rate storage media, equipment and systems
TA8 Multimedia home server systems

TC100で扱われる技術的将来課題は，AGSにおいて審議される．e-publishing/e-bookは2003年11月に日本から提案され[6]，以降数年間のAGSにおいて，この課題が取り上げられて幾つかの新作業課題提案(NP)が推奨された．

この日本からの最初の提案文書は，それまで幾度となく繰り返されたe-publishing/e-bookに関する国内標準化活動への反省と国際標準化活動に対する期待に基づいている．それを本報告の附属資料Aとして添付する．

2005年5月には，AGS(Advisory Group on Strategy)会議においては，当時すでにe-bookに関連してTC100直下で活動を行っていた二つのプロジェクト(PT 62448, PT 62448)を含めて，"Multimedia e-publishing and e-book"を対象とするTAの設立について議論[7]が開始されている．

これらのプロジェクトはいずれも日本からの提案に基づき，AGSでの議論の後，TC00に提案されたNPが承認されて，次のとおり活動が進行した．つまりAGSにおける新TAの議論の根拠となり，TA10成立後の最初のTA10傘下のプロジェクトとなった．

(1) PT 62229: Multimedia systems and equipment - Multimedia e-publishing and e-books - Conceptual model for multimedia e-publishing

0. AGS
    AGS recommended an NP (100/AGS(Secr)152), 2004-05
1. NP
    New work item proposal (100/864/NP), 2004-10
    Result of Voting on NP - Document 100/864/NP, 2005-01
    Disposition of Voting Comments on NP - Document 100/864/NP, 2005-02
2. RVN
    100/930/RVN, 2005-02
3. PT Meeting, 2005-09-28, San Jose
    CD[DTS]ver.50928
4. Voting
    DTS circulation (100/1042/DTS), 2005-11
    DTS text (100/1042e/DTS)
    IEC-CO Comments, 2006-01
    Disposition of IEC-CO Comments (JRA1-7), 2006-05
    Voting results, 2006-02
    100/1088/RVC, Result of voting and compilation of comments, 2006-05
5. Final Text
    Final text for publication, 2006-05
    Publication, 2006-07

(2) PT 62448: Multimedia systems and equipment - Multimedia e-publishing and e-books - Generic format for e-publishing, 1st edition

0. AGS
    AGS recommended an NP (100/AGS(Secr)168), 2004-10
1. NP
    New work item proposal (100/AGM(Secr)/368, TC100 Fast Std. Proc.), 2005-09
    Report of TC100/AGM [100(San Jose/AGM)15], Recommendation 6 (approved to apply the TC100 Fast Std. Proc.), 2005-09
    Nomination for experts (100/1017/DC), 2005-09
2. Res. of Assessment
    100/1031/INF, 2005-10
3. CDV
    CDV text, ver.060416
    CDV circulation (100/1090/CDV), 2006-04
    CDV text (100/1090e/CDV)
    IEC-CO Comments, 2006-08
4. Voting
    Results of voting and comments received on 100/1090/CDV, 2006-10
    Forwarding RVC docs on 100/1090/CDV, 2006-10
    100/1163/RVC, 2006-11
    Disposition of IEC-CO Comments, 2006-11
5. Final Text
    Final text for publication, 2006-11
    Publication, 2007-04

3.2 経緯

JEITAはTC100におけるe-book/e-publishingの活動の意義を考慮して，2005年からE-book標準化グループの設立に向けて準備を開始し，2005年8月にはE-book標準化グループの第1回委員会を開催して，主査，副主査としてそれぞれ植村八潮（東京電機大学），小町祐史（パナソニックコミュニケーションズ（当時））を指名した．

E-book標準化グループは，以降次のような委員会開催を行い，

表1 E-book標準化グループの委員会

通番	2005年度	通番	2006年度	通番	2007年度	通番	2008年度	通番	2009年度
1	2005-08-08	8	2006-04-18	17	2007-04-26	25	2008-05-09	34	2009-05-08
2	2005-09-13	9	2006-06-06	18	2007-06-01	26	2008-06-05		
3	2005-10-21	10	2006-08-01	19	2007-07-20	27	2008-07-22		
4	2005-12-07	11	2006-09-13	20	2007-09-18	28	2008-09-05		
5	2006-01-16	12	2006-10-16	21	2007-10-30	29	2008-10-14		
6	2006-02-20	13	2006-11-13	22	2007-11-27	30	2008-11-11		
7	2006-03-22	14	2006-12-18	23	2008-01-18	31	2009-01-13		
		15	2007-01-30	24	2008-03-04	32	2009-02-25		
		16	2007-03-16			33	2009-03-17		

- 新TAの提案
- PT 62229の推進
- PT 62448の推進

を行うと共に，TA10成立の後は，TA10の国内対応組織として活動を続けている．

3.3 活動

TA10は，年2回のAGM会議と年1回のAGS会議とに活動報告を行っている．最近の報告は2009年5月のAGMに対する100/AGM(TA10)666であり，それを本報告の附属資料Bとして添付する．

4. 制定済みの規定
4.1 IEC TS 62229: Conceptual model for multimedia e-publishing

Multimedia e-publishing and e-bookの概念モデルを標準化の観点から示し，e-publishing/e-bookの構成要素の機能と関係を明確にすると共に，e-publishingサービスを既定する．

主なclauseの構成は次のとおりである．

```
1. Scope
2. Normative references
3. Terms and definitions
4. Model for multimedia e-publishing
 4.1 Contents creation/distribution model
 4.2 Multimedia data structure model
 4.3 E-book distribution model
 4.4 Interfaces to e-book systems and equipment
5. Issues to be standardized
Annex A  Electronic dictionary
Annex B  Electronic map and its application in e-book
Annex C  Electronic newspaper
Bibliography
```

4.2 IEC 62448: Generic format for e-publishing, 1st edition

PublisherとData preparer（いずれもConceptual modelに示される）との間のe-bookデータの交換フォーマットを既定する．このフォーマットは，改訂，拡張，多様な論理構造に対応可能である．

主なclauseの構成は次のとおりである．

1. Scope
2. Normative references
3. Terms and definitions
4. Position and requirements for generic format
5. Notation
6. Logical structure
7. Semantics
Annex A BBeB Xylog Format

4.3 IEC 62448: Generic format for e-publishing, 2nd edition

1st editionに対して，次のAnnex Bを追加している．

Annex B XMDF XML Format

5. むすび

IEC/TC100におけるTA10設立の経緯と設立後のTA10における活動概要を，主として国際的に配布された文書に基づいてまとめた．未配布文書またはまだ文書化されていないTA10での議論は，流動的かつ戦略的であり，関連分野のエキスパートの参加が強く望まれている．

本稿に示した課題に関して議論をいただいている国際および国内のTC100/TA10関係者に感謝する．

文献

[1] TC100: Audio, video and multimedia systems and equipment, http://tc100.iec.ch/index_tc100.html
[2] 柴田明一，IECにおけるマルチメディア標準化の動向，画像電子学会メディア統合技術研究会 MT5-S3-1, 1995-09
[3] TC100/TA10: Multimedia e-publishing and e-book, http://tc100.iec.ch/about/structure/tc100_ta10.htm
[4] AGS: Advisory Group on Stategy, http://www.y-adagio.com/public/committees/iec_tc100_ags/index.htm
[5] 100/AGM(Secretariat)416, New TA proposal, Multimedia e-publishing and e-book, 2006-05-11
[6] 100/AGS(Secretariat)114, Overview of e-publishing and e-books and their requirements for international standardization, 2003-11
[7] 100/AGS(Secretariat)183, Expected new TAs for new projects at hand, 2005-05
[8] 100/AGM(TA10)666, TA10 report to TC100 audio, video and multimedia systems and equipment, 2009-05

附属資料

A. 100/AGS(Secretariat)114
B. 100/AGM(TA10)666

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 100: AUDIO, VIDEO AND MULTIMEDIA SYSTEMS AND EQUIPMENT
ADVISORY GROUP ON STRATEGY

Overview of E-Publishing and E-Books and their Requirements for International Standardization

Yushi KOMACHI
Panasonic Communications

2003-11-05

1. E-Book Market in Japan

1.1 Major topics

1. "Electronic Book" (SONY), 1990

2. "Digital Book" (NEC), 1993

3. E-book Shop: "Papyless", 1995

4. E-book Consortium, 1998-2000

5. PDA and "eBook Reader", 2000

6. E-book Shop: "Pubri", 2000

7. E-Book Equipment, 2003

1.2 Market size

(by "E-book Business Report", 2003)

(1) Market of E-Books: Electronic Books*

*: Electronic book data distributed by a network, excluding
— electronic dictionaries,
— electronic maps,
— academic electronic journals and
— texts for e-learning.

- 2002: Yen 1,000,000,000

- 2005: Yen 18,000,000,000 (estimated)

(2) Market of Electronic Dictionaries

- 1997: Yen 11,000,000,000

- 2000: Yen 39,000,000,000

- 2003: Yen 44,000,000,000 (estimated)

(3) Contents of E-Books

1. Novel
2. Computer/Technical
3. Cartoon
4. Science fiction
5. Business
6. Photo album
7. Essay
8. News

(4) Readers of E-Books

- Men/Women = 4/1
- (Regarding Mobile phone books: Men/Women = 2/3)

(5) E-Book distribution sites

E-Book distribution sites site	number of titles	market share (%)	number of new titles /month
Papyless	11,300	29	400-500
Space Town Books	5,500	14	200-300
Pubri	4,600	12	200-300
PDABOOK.JP	4,000	10	200
Rakuten Download	3,747	10	200
10DaysBook	3,500	9	200
Bitway-books	2,500	6	150
Web no Shosai	2,100	5	120
M-stage book	1,700	4	70
Sum total	39,000*	99	--
*: including duplication			

Download from the E-Book distribution sites	
site	number of downloads /month
Papyless	32,000
10DaysBook	20,000
Space Town Books	15,000
Rakuten Download	15,000

(6) File Formats of E-Books

File Formats of E-Books			
File format	Reader software	Equipment	Support feasibility for

			DRM (Digital Rights Management)
Plain text	-	PC, PDA	
PDF	Adobe Reader	PC	*
Adobe eBook	Adobe Reader	PC	***
dotbook	T-Time	PC, PDA	**
XMDF	bunko viewer	PC, PDA, Mobile Phone, etc.	**
ebi.j bookreader	ebi.j bookreader	PC	***
DigiBook	kraemon	PC	***
Expanded Book	Expanded Book	PC	*
bj2	Book Jacket2	PC	*
Kacis Book	Kacis reader	PC	**

From the readers' point of view, an appropriate standard for file format of E-Books, particularly E-Books on cartoon, are requested. Today available E-Books on cartoon employ a compressed bitmap image scanned on rendered images. They could be described more sophisticatedly with a vector graphic technology.

2. E-Book Equipment

σ Book

will be put on the market in Fall'03, by Panasonic.

- No power switch, using extremely low power LCD

- Resolution: 180 dpi
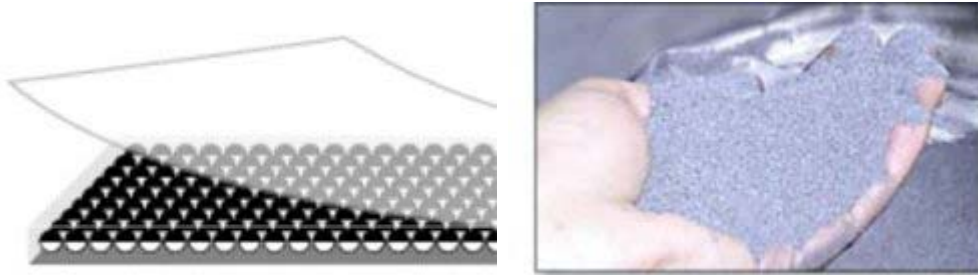
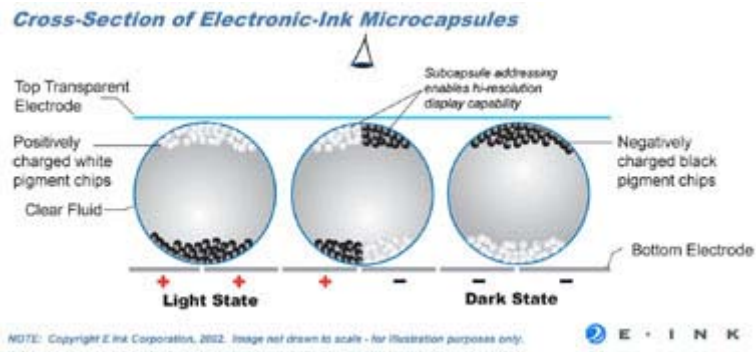- 154.5mm(W), 205mm(H), 25.4mm(D), 520g

3. E-Paper

3.1 Several Types of E-Papers

Several types of E-Papers have been developed and announced.

(1) Gyricon Media

(2) E Ink, Toppan/Philips
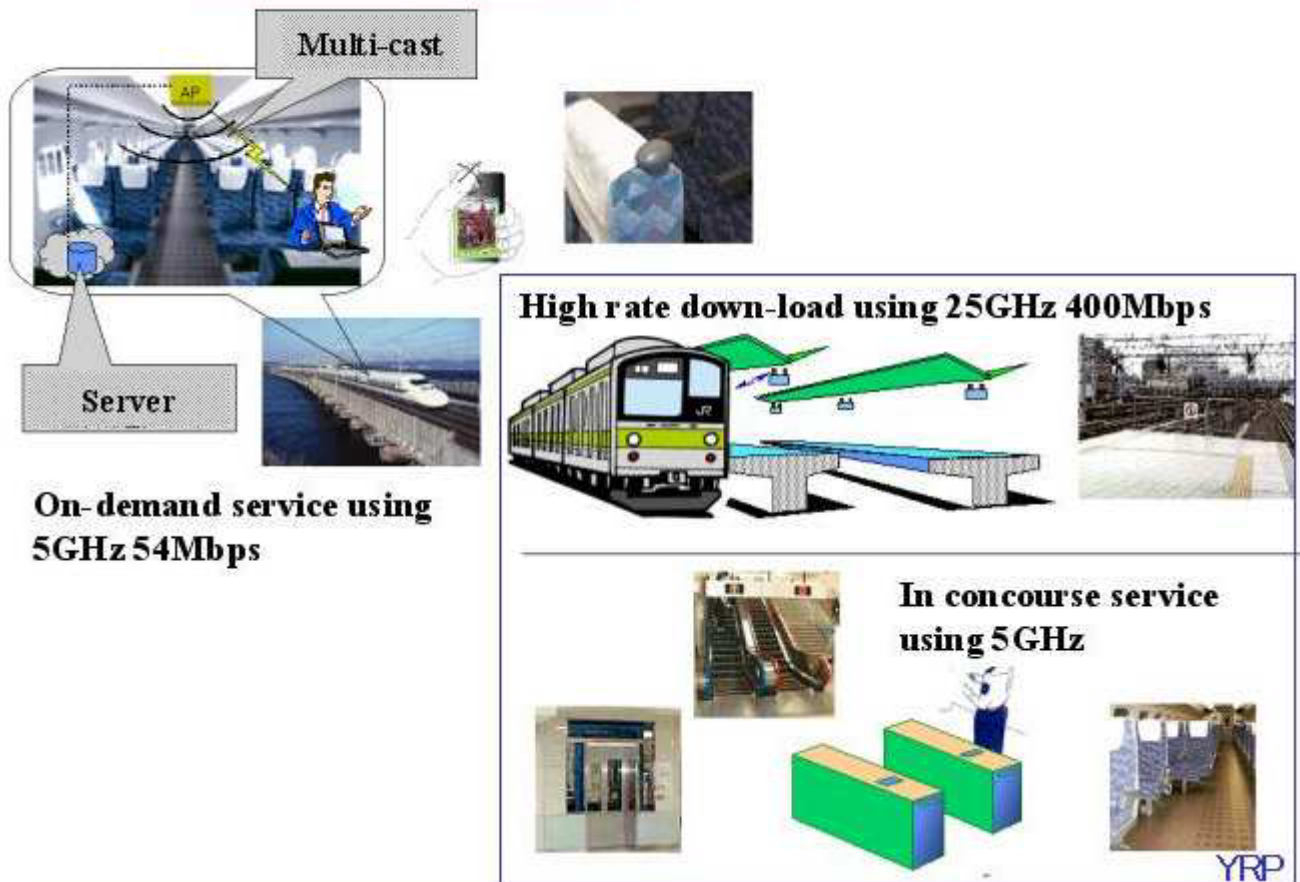

(3) Xerox

3.2 E-Paper Consortium

JBMIA (Japan Business Machine and Information System Industries Association) established E-Paper Consortium in 2003. Its major activities are

- to clarify user requirements and functional requirements for E-Paper,

- to develop applications of E-Paper and their business models.

Twenty-one companies, e.g., Toshiba, SONY, Toppan/E-Ink, Panasonic, etc., join the E-Paper Consortium.

4. Electronic Newspaper

References

[1] Y. Uemura, E-Book market and E-paper, EP/WG2 report, INSTAC/JSA, 2003-07

[2] Web on σBook, http://matsushita.co.jp/corp/news/official.data/data.dir/jn030422-5/jn030422-5.html

[3] Web on Gemstar, http://www.gemstar-ebook.com/ebcontent/devices/default.asp

[4] Web on Gyricon Media, SmartPaper, http://www.gyriconmedia.com/smartpaper/index.asp

[5] Web on E Ink, http://www.eink.com/technology/

[6] Xerox E-Paper, http://www.bis.uni-oldenburg.de/abt1/waetjen/reutlingen/sld018.htm
[7] Web on E-Paper Consortium, http://www.jbmia.or.jp/epc/
[8] G. Ohta, A prototype of Electronic Newspaper distribution by broadband nomadic wireless MMAC/HiSAWNa/b, MMAC HSWA Committee, 2001-12

5. Standardization Items

(1) Multimedia electronic book systems - Conceptual model for standardization of multimedia electronic book systems

The model should include all the systems for electronic publishing, including multimedia book creating, distributing and browsing systems. The model can clarify standardization issues on multimedia electronic book systems.

(2) Multimedia electronic book systems - Data formats of multimedia electronic books

- Non-structured raster graphic book data (still and moving)

- Structure multimedia data

- Interactive data

(3) Multimedia electronic book systems - Minimum requirements for multimedia electronic book viewers

Requirements on, e.g., interface, image area, page concept, etc.

100/AGM(TA10)666

For IEC use only

REPORT TO TC 100 Audio, video and multimedia systems and equipment

TA10	TAM	Secretary	Date
	Yashio Uemura	Mikio Mukai	2009-05-21

Please ensure this form is sent to the TC 100 Secretariat at least one week before the TC 100 or TC 100/AGM meeting by sending it by e-mail.
In the event that a TA meeting will be held in conjunction with a TC 100 plenary meeting, the report to the TC 100 Chairman shall be made available to the TC 100 Secretariat, by means of diskette or the local network, at least two hours before the beginning of that plenary meeting.

Title of TA
Multimedia e-publishing and e-book

Reference of last report submitted 100/AGM(TA 10)604	Date of last report submitted 2008-11-17
Place of meeting held since NA	Date of meeting held since NA
Place of future meeting NA	Date of future meeting NA

A. Questions to TC 100 or TC 100/AGM on which a decision is required
NA

B. Developments and expectations in market covered by the TA (other than those included in D and E), such as expected new work, limiting / expansion scope, life time of TA.

Transition to multimedia e-publishing and e-book has begun on Worldwide basis. Needs for interoperable multimedia e-publishing and e-book equipments are expected.

C. Requests for new/modified liaisons needed for efficient and effective working in the TA at present or future projects.
NA

TC100 /TA 10 Status of Documents

Project No. (Project leader)	Title	Progress [Future stage]		Date [Target]
62571 (Kelly Gosh)	Digital Audiobook File Format and Player Requirements	100/1293/NP 100/1351/RVN 100/1430/CD 100/1488/CC	PNW ANW 1CD ACDV	07/9/21 08/2/31 08/10/17 08/12
62605 (Saiga)	Multimedia systems and equipment - Multimedia e-publishing and e-books - Interchange format for e-dictionaries	*1.1.2* 100/1400/ NP 100/1465/RVN	PNW ANW *1.1.3* 1 CD	*1.1.4* 08/5 /16 *1.1.5* 08/9 /5 09/3

Expected Projects

Project No. (Project leader)	Title	Progress [Future stage]	Date [Target]
	Multimedia e-publishing and e-books - Proofreading in e-publishing environment	*1.1.6*	
	Guideline for e-book distribution by interchangeable storage media	*1.1.7*	

Published standards

No.		Title	Pages	Date
1	IEC TS 62229 (Uemura)	Multimedia systems and equipment - Multimedia e-publishing and e-books - Conceptual model for multimedia e-publishing	15	2006/7/24
2	IEC IS 62448 (Komachi)	Multimedia systems and equipment - Multimedia e-publishing and e-books - Generic format for e-publishing	80	2007/4/11
3	IEC 62448 2nd edition (Komachi)	Amendment 1 to IEC 62448: Multimedia E-publishing and E-books - Generic format for E-publishing		2009/2/
4	IEC 62524 (Saiga)	Multimedia e-publishing and e-books - Reader's format for multimedia e-publishing		2009/2/

E. **Maintenance forthcoming year** possible maintenance projects, which need a decision in the forthcoming year regarding reconfirmation, modification or withdrawal due to the validity date.
NA

Name or signature of the technical area manager	Name or signature of the technical secretary
Yashio Uemura	**Mikio Mukai**