



Overview of ICRP Committee 3 Protection in Medicine

*E. Vaño (C3 Chair);
D. Miller (C3 Vice-chair); M. Rehani (C3 Secretary)*

**ICRP 2013: 2nd International Symposium on
the System of Radiological Protection
Abu Dhabi. October 2013**

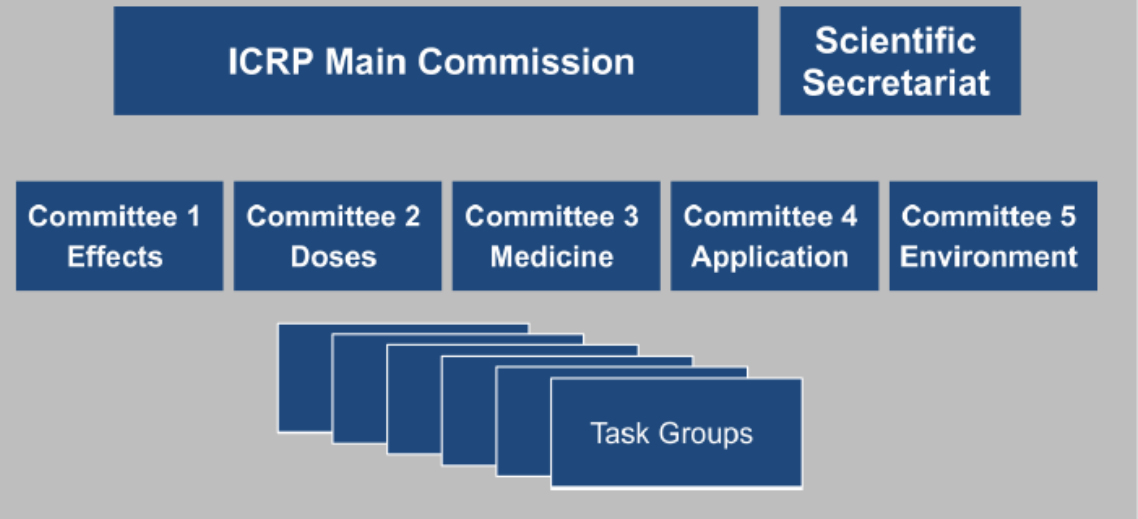


INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION
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STRATEGIC PLAN 2011-2017

STRUCTURE



— **Committee 3, Protection in Medicine:** develops recommendations and guidance on the protection of patients, staff, and the public against radiation exposure in medicine.



STRATEGIC OBJECTIVES, 2011 – 2017

“ Respond to new challenges in radiological protection.”



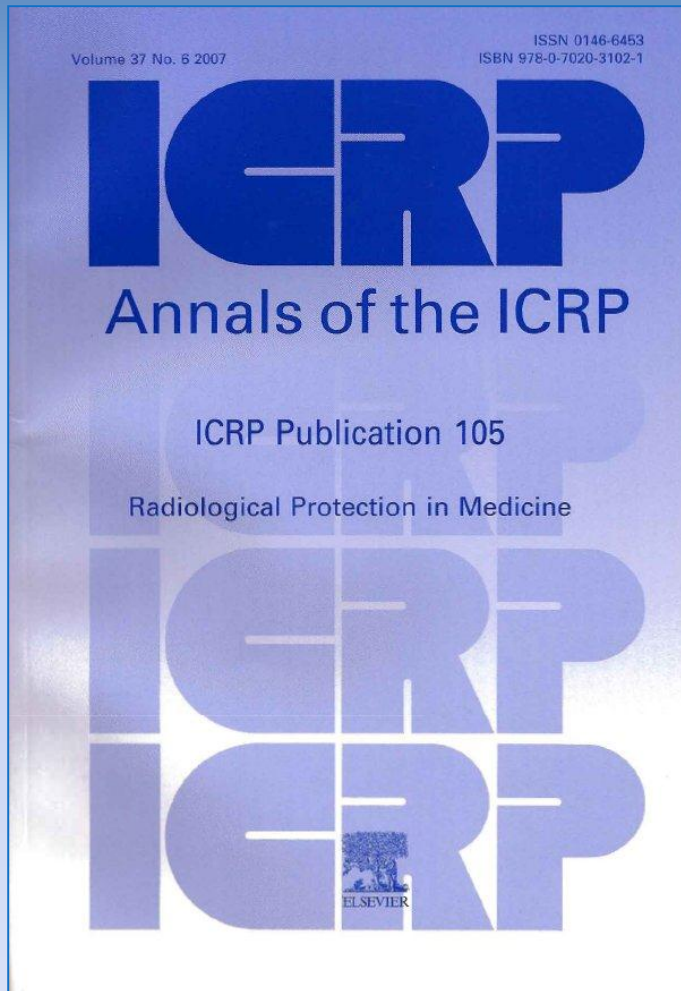
INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION

ICRP C3 (October 2013) (Protection in Medicine)

16 members (MP=Med.Phys. RT=Radiotherapy NM=Nucl.Med. DR=Diag. Radiol.)

- **Applegate** Kimberly Prof DR (USA) **2013**
- **Bourguignon** Michel Prof (France) **2013**
- **Dauer** Lawrence Dr MP (USA)
- **Demeter** Sandor Dr NM (Canada) **2013**
- **Kang** Keon Prof NM (Korea) **2013**
- **Khong** Pek-Lan Prof DR (China)
- **Loose** Reinhard Prof DR (Germany) **2013**
- **Martin** Colin Dr MP (UK) **2013**
- **Miller** Donald Prof DR (USA) **Vice-Chairman**
- **Ortiz-Lopez** Pedro Dr MP Spain)
- **Rehani** Madan M. Prof MP (India/Austria) **Secretary**
- **Riklund** Katrine-Åhlström Prof DR, NM (Sweden)
- **Scalliet** Pierre Prof RT (Belgium) **2013**
- **Vano** Eliseo Prof MP (Spain) **Chairman**
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- **Yue** Baorong Prof (China)

The system of RP in medicine



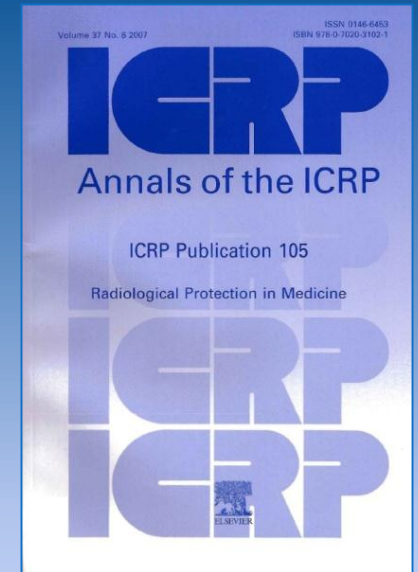
- **Medical exposure of patients, including their comforters and carers, and volunteers in biomedical research.**
- Application of the fundamental principles (justification, optimisation of protection, and dose limits . not applicable for patients).

The system of RP in medicine

- The Commission uses a division into three types of exposure:
 - **medical exposure**, which is principally:
 - the exposure of persons as part of their diagnosis or treatment (or exposure of a patient's embryo/fetus or breast-feeding infant) and
 - their comforters and carers (other than occupational),
 - but also includes volunteers in biomedical research;
 - **occupational exposure**, which is exposure incurred at work and principally as a result of work; and
 - **public exposure**, which comprises all other exposures.

MEDICAL EXPOSURES

- It is **not appropriate to apply dose limits to medical exposure of patients**, because such limits would often do more harm than good.
- The **emphasis is on justification** of the medical procedures and on the **optimisation of radiological protection**.
- In **radiation therapy**, in addition to optimization, the **avoidance of accidents** is a predominant issue.
- With regard to comforters and carers, and volunteers in biomedical research, **dose constraints are appropriate**.



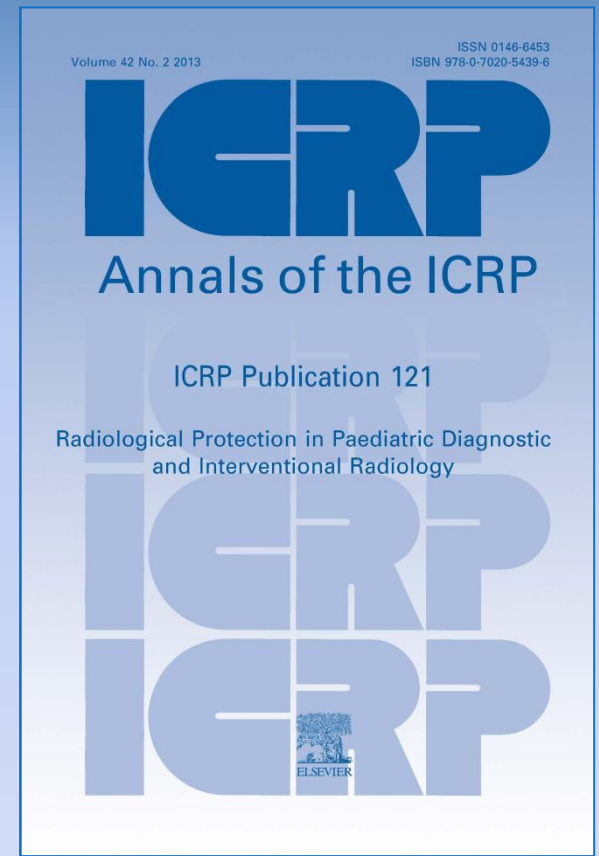
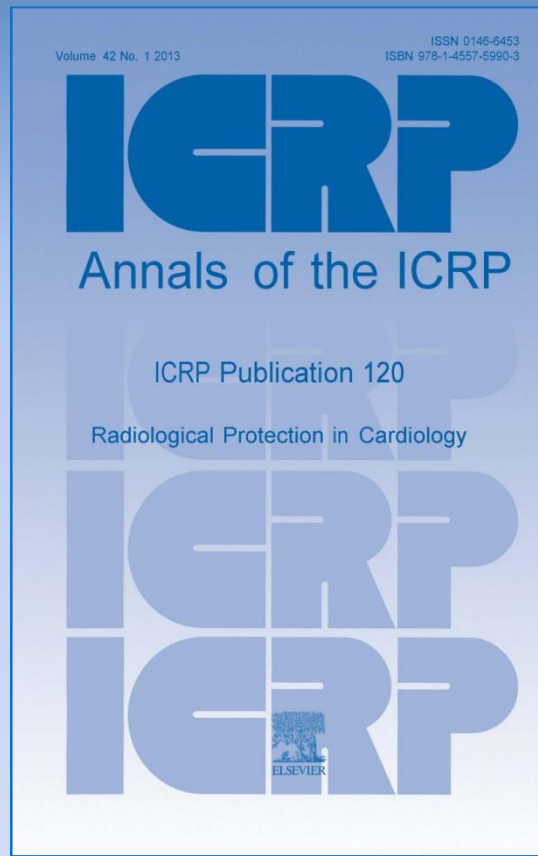
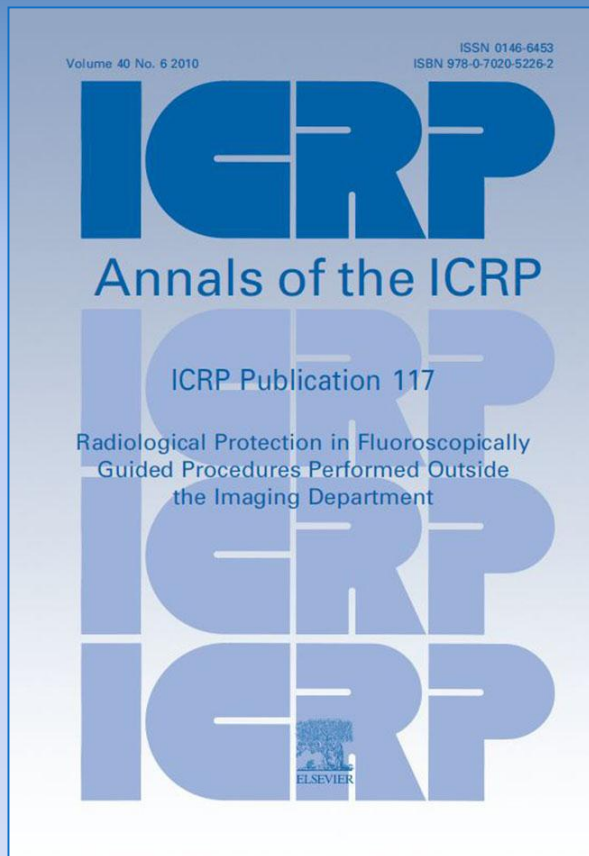
Occupational exposure in medicine

- In several areas of medicine, **the control of occupational exposure is of particular importance.**
 - Nursing of brachytherapy patients when the sources have been implanted.
 - Fluoroscopically guided interventional procedures (and now, with the new limit for the lens of the eye).
 - Radiopharmaceutical preparation, administration and imaging by staff in nuclear medicine.

ICRP C3 Protection in Medicine from 2000

- The ICRP reports (18) dealing with radiological protection (RP) in medicine from 2000 cover topics on:
 - *Education and training in RP;*
 - *Preventing accidental exposures in radiation therapy;*
 - *Doses to patients from radiopharmaceuticals;*
 - *Radiation safety aspects of brachytherapy;*
 - *Release of patients after therapy with unsealed radionuclides;*
 - *Managing radiation dose in interventional radiology, digital radiology, computed tomography, paediatrics, cardiology and other medical specialties.*

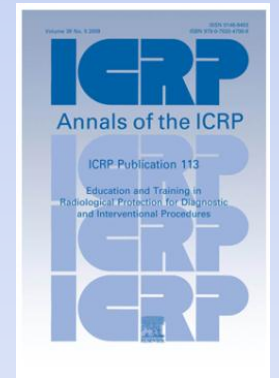
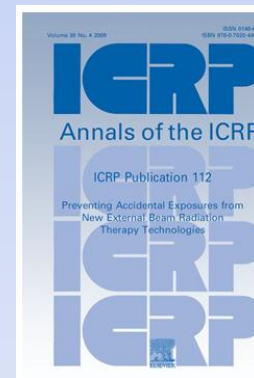
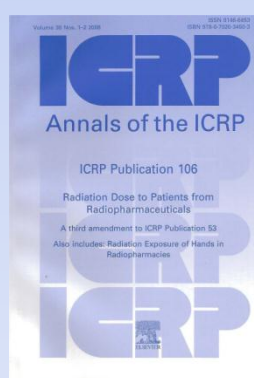
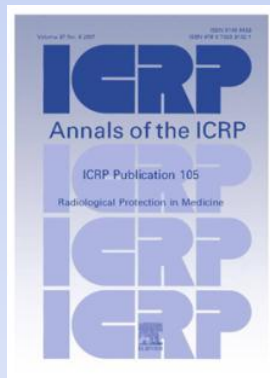
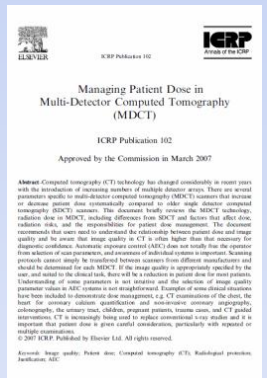
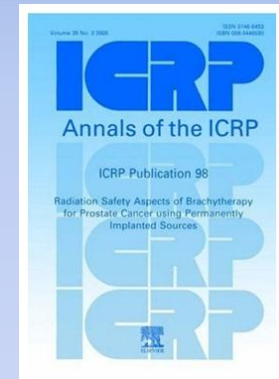
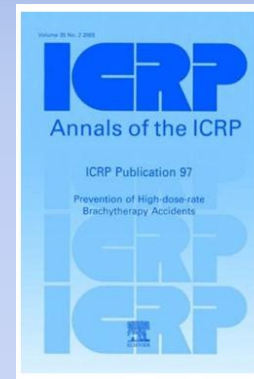
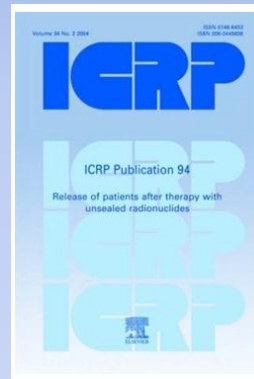
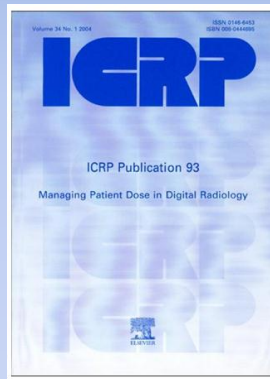
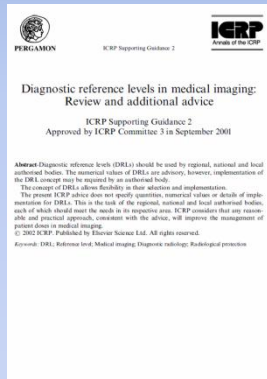
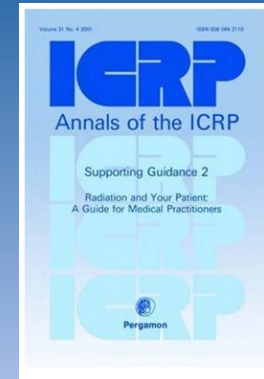
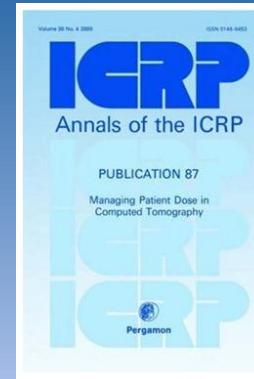
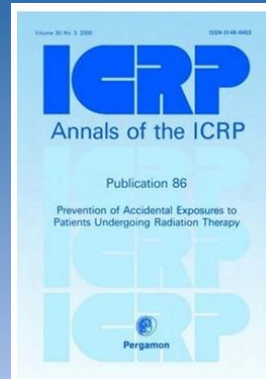
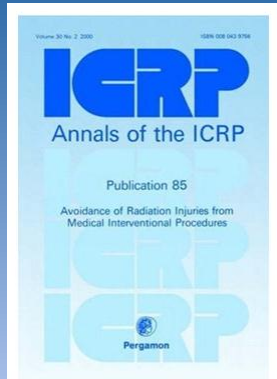
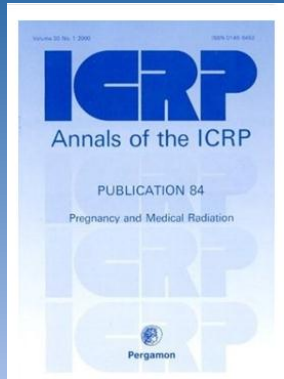
ICRP Committee 3: The most recent documents



ICRP C3 publications from 2000

- **P121. Radiological Protection in Paediatric Diagnostic and Interventional Radiology.** Ann. ICRP 42(2), 2013.
- **P120. Radiological Protection in Cardiology.** Ann. ICRP 42(1), 2013.
- **P117. Radiological Protection in Fluoroscopically Guided Procedures outside the Imaging Department.** Ann. ICRP 40(6), 2010.

ICRP Committee 3: publications from 2000



ICRP C3 publications from 2000

- P113. **Education and Training** in Radiological Protection for Diagnostic and Interventional Procedures. Ann. ICRP 39 (5), 2009 (issued 2011).
- P112. Preventing accidental exposures from new external beam **radiation therapy** technologies. Ann. ICRP 39 (4), 2009.
- P106. Radiation Dose to Patients from **Radiopharmaceuticals**: Addendum 3 to ICRP Publication 53, Ann. ICRP 38(1-2), 2008.

ICRP C3 publications from 2000

- P105. Radiological **Protection in Medicine**, Ann. ICRP 37(6), 2007.
- P102. Managing Patient Dose in Multi-Detector **Computed Tomography** (MDCT), Ann. ICRP 37(1), 2007.
- P98. Radiation safety aspects of **brachytherapy** for prostate cancer using permanently implanted sources, Ann. ICRP 35(3), 2005.

ICRP C3 publications from 2000

- P97. Prevention of high-dose-rate **brachytherapy accidents**, Ann. ICRP 35(2), 2005.
- P94. Release of Patients **after Therapy** with Unsealed Radionuclides, Ann. ICRP 34(2), 2004.
- P93. Managing patient dose in **digital radiology**, Ann. ICRP 34(1), 2004.

ICRP C3 publications from 2000

- SG2. Radiation and **your patient**: A guide for medical practitioners, Ann. ICRP 31(4), 2001.
- SG2b. Diagnostic **reference levels** in medical imaging . review and additional advice, ICRP Supporting Guidance 2. Ann. ICRP 31(4). 2001.
- P87. Managing Patient Dose in **Computed Tomography**, Ann. ICRP 30(4), 2000.

ICRP C3 publications from 2000

- P86. Prevention of accidental exposures to patients undergoing **radiation therapy**, Ann. ICRP 30(3), 2000.
- P85. Avoidance of Radiation Injuries from Medical **Interventional Procedures**, Ann. ICRP 30(2), 2000.
- P84. **Pregnancy** and Medical Radiation, Ann. ICRP 30(1), 2000.

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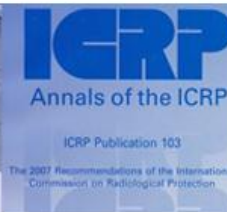
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Preventing accidental exposures from new external beam radiation therapy technologies

ICRP Publication 112

Task Group:
P. Ortiz-Lopez (Chairman), J.M. Cosset,
O. Voncken, J.C. Rosenwald, P.
Duncombe, J.J. Vanagut, L. Pinillos,
S. Vashishta



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“ Accidents in
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Preventing accidental exposures from new external beam radiation therapy technologies

ICRP Publication 112

Task Group

P. Ortiz Lopez (chairman), J.M. Cosset, O. Holmberg, J.C. Rosemond, P. Dancombe, J.J. Vignati, L. Pinhas, S. Vaidyan

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ICRP Publication 103

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Radiological Protection in Medicine

ICRP Publication 105

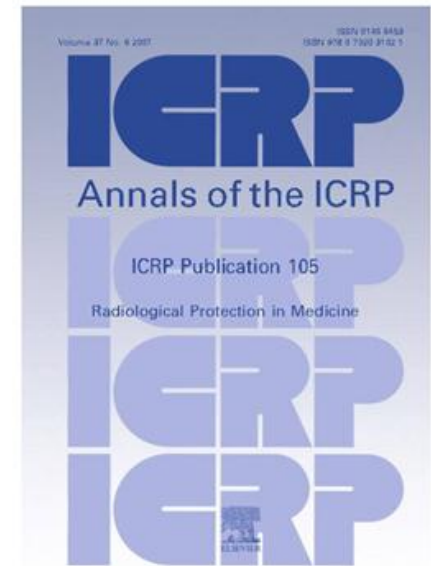
Ann. ICRP 37 (6), 2007

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Abstract - This report was prepared to underpin the Commission's 2007 Recommendations with regard to the medical exposure of patients, including their comforters and carers, and volunteers in biomedical research. It addresses the proper application of the fundamental principles (justification, optimisation of protection, and application of dose limits) of the Commission's 2007 Recommendations to these individuals.

With regard to medical exposure of patients, it is not appropriate to apply dose limits or dose constraints, because such limits would often do more harm than good. Often, there are concurrent chronic, severe, or even life-threatening medical



Free available translations of the ICRP publications to several languages

ICRP C3 Protection in Medicine. Work in Progress

- RP in Ion Beam Therapy,
- RP in Cone Beam CT,
- Occupational Protection in Brachytherapy,
- Justification in Imaging,
- Doses to Patients and Staff from Radiopharmaceuticals (update),
- Occupational Protection in Interventional Radiology,
- Diagnostic Reference Levels for Diagnostic and Interventional Imaging.
- The Committee is also involved in preparation of a document on effective dose (and its use in medicine).

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