representation to the generic user DTD.

In this second phase, we can take advantage of all existing back-conversion tools and methods, built around the RAINBOW DTD.

Hence there are numerous advantages in coding the recognition result in compliance with the ODIL DTD:

- you start from a non ambiguous syntax, checked by an SGML parser;
- for the first up-conversion phase, you can use an SGML-SGML conversion tool;
- the same conversion tool can be used both for phase 1 and phase 2;
- in both phases, you take advantage of synergy between the various studies conducted and products implemented in order to achieve conversions in the SGML world.

For instance, with OMNIMARK, an ODIL-RTF transcoder was developed in three days.

You find on Fig 3 an example of a document processed by our PRASAD prototype, and its corresponding ODIL expression on the following page.



Fig 3: Example of a processed page and its expression in ODIL

## References

- [1] E Van Herwijnen, Practical SGML, Kluwer Academic Publishers.
- [2] ISO 8613-5, Office Document Architecture (ODA) and Interchange Format, Part 5, Annex E.
- [3] Ph Lefèvre, C Felter, J.Y Christine, Prototype de reconnaissance de documents PRASAD, Note EDF-DER HN-46/93/136, (dec 1993).
- [4] Ph Lefèvre, F Reynaud, Choix d'un format dereprésentation normalisé de la structure physique des documents, EDF-DER HN-46/93/035, (mar 1993).
- [5] Ph Lefèvre, F Reynaud, Spécification d'un format SGML de représentation de la structure physique des documents après segmentation et reconnaissance: ODIL, Note EDF-DER HN-46/93/036, (jun 1993).
- [6] R Ingold, « A document description language to drive document analysis », in *Proceedings of the First International Conference on Document Analysis and Recognition*, 294-301, (oct 1991).
- [7] A Belaïd, J.C Anigbogu, Y Chenevoy, Qualitative analysis of low-level logical structures, electronic Publishing, Vol 6(4), 435-446, (dec 1993).
- [8] O.T Akindele, Vers un système de construction automatique de modèles génériques de structures de documents, Thèse de doctorat de l'Université Henri Poincaré Nancy 1, (jan 1995).
- [9] D Sklar, Accelerating Conversion to SGML via the Rainbow Format, <TAG>, (jan 1994).
- [10] D Sklar, The Annotated Rainbow DTD Rainbow version 2.2, Electronic Book Technologies, (feb 1994) e-mail: rainbow@ebt.com.