

and for this we consider the following

Example 2. Let  $R$  be a Semi-local PID,  $K$  the quotient field of  $R$  and  $x$  an indeterminate over  $R$ . The almost integral closure

$S = R + xK[x]$ , is a two dimensional Bezout domain and is a URD (Example 1, this chapter).

If  $P_1 = p_1R, P_2 = p_2R, \dots, P_n = p_nR$  are all the non zero prime ideals of  $R$  then correspondingly  $p_i S (i = 1, 2, \dots, n)$  are maximal ideals of  $R$  of rank 2. Now let

$T = \{ y \in S \mid y \notin p_i S \text{ for any } i = 1, 2, \dots, n \}$ , then it can be shown that  $T$  is a multiplicative saturated set. Localizing at  $T$ ,  $S_T$  is a two dimensional Bezout domain with exactly  $n$  maximal ideals  $p_i S_T (i = 1, 2, \dots, n)$ . Obviously  $S$  is a semi quasi-local Bezout domain and so an HCF ring of Krull type. Finally that  $S_T$  is not a Semi-rigid Domain follows from the fact that  $0 \neq p_i S$  is a prime ideal. That is  $S_T$  is our example of an HCF ring of Krull type which is not a Semi-rigid Domain.

Note.  $S$  itself is an example of an HCF ring of Krull type. We have avoided  $S$  as an example on the basis that its verification becomes very lengthy.

Remark 2. Introduction of the concept of Unique Representation is the result of an effort to study and to single out those HCF domains in which the factorization is rather simple. We cannot at present guess the scope of this concept but it can be remarked that this concept could be of some help in the study of HCF rings of Krull type, semi quasi-local Prufer domains, \*-essential Bezout domains etc. At least in these cases we could start with the knowledge that the elements of these integral domains have some factorization properties.