1163-13-242   **Gyu Whan Chang*** (`whan@inu.ac.kr`), Incheon, 22012, South Korea, and **Jun Seok Oh**, Incheon, 22012. *The monoid of regular elements in commutative rings with zero divisors.* Preliminary report.

Let R be a commutative ring with identity, $R^\bullet$ be the multiplicative monoid of regular elements in R, t be the so-called t-operation on R or $R^\bullet$. A Marot ring is a ring whose regular ideals are generated by their regular elements. The Marot ring was introduced by J. Marot in 1969 and has been playing a key role in the study of rings with zero divisors. The notion of Marot rings can be extended to t-Marot rings such that Marot rings are t-Marot rings. In this talk, we study some ideal-theoretic relationships between a t-Marot ring R and $R^\bullet$. We first construct an example of t-Marot rings that are not Marot. This also serves as an example of rank-one DVRs of reg-dimension ≥ 2. Let R be a t-Marot ring, $t\text{-}spec(A)$ be the set of prime t-ideals of A, and $Cl(A)$ be the class group of A for $A = R$ or $R^\bullet$. Then, among other things, we prove that the map $\varphi : t\text{-}spec(R) \to t\text{-}spec(R^\bullet)$ given by $\varphi(P) = P^\bullet$ is bijective; $Cl(R) = Cl(R^\bullet)$; R is a Krull ring if and only if $R^\bullet$ is a Krull monoid; and R is a factorial ring if and only if R is a Krull ring with $Cl(R) = \{0\}$. (Received August 30, 2020)