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Jay Shapiro* (jshapiro@gmu.edu), Department of Mathematics, George Mason University,
Fairfax, VA 22030. *Flat epimorphisms and a generalized Kaplansky ideal transform.*

We generalize the notion of the Kaplansky ideal transform $\Omega(I)$ to an ideal I in an arbitrary commutative ring R by defining $\Omega(I)$ as the localization of R with respect to a certain filter of ideals. It is shown that if the total ring of quotients of R is von Neumann regular, then $\Omega(I)$ is the ring of global sections over the open set $D(I)$. In addition, generalizing a result of M. Fontana [Kaplansky ideal transform: A Survey, Lecture notes in Pure and Applied Mathematics, **205**, Marcel Dekker, New York, 1999 271–263], for such rings we characterize when the open set $D(I)$ is an affine scheme in terms of the flatness of $\Omega(I)$. (Received August 04, 2005)